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1961 Seen as Profitable Year For Industry

FROM ALL sections of the nation, leaders in the pesticide and fertilizer fields are looking for a busy, interesting, and profitable year in 1961. The prediction of better profit margins is sometimes hedged with qualifications and "ifs", but generally, there is a visible optimism in the observations as the trade gets set to tackle the year's problems.

Pesticide manufacturers and sales people observe that the pressure of the Food and Drug Administration in residue matters, as well as the influence of the unbending Delaney amendment calling for zero tolerance on any alleged carcinogenic material, will have a stifling effect on the introduction of new materials. But there are other factors exerting a beneficial influence on the market.

Among these favorable trends as noted by some observers, is the development of a more orderly marketing situation in the pesticide field which should result in a better return on investment than has been the case for a number of years.

In both the pesticide and fertilizer industries, raw material supplies are expected to be adequate throughout 1961. Both fields are directly affected by the farm income level, which is expected to remain at about the 1960 level throughout the new year.

A number of commentators in the fertilizer industry look for the farmer to share a little better in the national economy, due to the attitude of the new administration. All see the need for better and more potent selling efforts.

Perhaps the situation could be summed up in the words of one contributor who says: "1961 will be full of interesting problems, but the result in the lower right-hand corner should be a little better if those involved realize price cutting does not increase consumption of plant food, but rather the size of the red figures."

Comments of people in the industry are presented below and on subsequent pages:

New Agricultural Chemical Assn. Is Formed in Midwest

KANSAS CITY, MO.—The newly-organized Midwest Agricultural Chemicals Assn. has elected Herbert Woodbury, Woodbury Chemical Co., as its president.

The new group, established at a meeting in Kansas City, Mo. early in December, is comprised of agricultural chemical manufacturers, formulators, and distributors engaged in the sale of basic agricultural chemi-

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Monsanto Completes Expansion Work On Methyl Parathion Pesticide Plant

ANNISTON, ALA. — Monsanto Chemical Co. has announced completion of a 50% expansion of its plant for manufacturing parathion and methyl parathion insecticides.

The facility, said to be the world's largest for producing these products, will have an annual capacity of 18 million pounds.

Parathion and methyl parathion are used for control of pests attacking cotton, citrus and deciduous fruit, forage and vegetable crops.

J. Paul Ekberg of St. Louis, director of marketing for the company's agricultural chemicals division, said that the expansion was necessary to keep pace with a fast-growing market for these products, up more than 50% in two years.

Demand for methyl parathion, used against the boll weevil, consumed the company's total capacity for the compound during the key cotton-growing months of May through August, Mr. Ekberg said.

The expansion, under construction since last May, incorporates all measures taken in the original unit to assure maximum safety for operating personnel, according to Monsanto.

Eighth Annual Chemical Conference Announced

LUBBOCK, TEXAS — "Servicing Agricultural Chemicals—Whose Responsibility" will be the point of emphasis at the eighth annual agricultural chemicals conference on the campus of Texas Technological College Feb. 14-16. Local research findings and their application to the agricultural field will be featured.

The conference is co-sponsored by Texas Technological College, Texas A&M College, and the West Texas Chamber of Commerce.

ASSOCIATION OFFICERS

ST. PAUL, MINN. — John M. Coates, International Minerals & Chemical Corp., was elected president of the Minnesota Fertilizer Industry Assn. at the group's recent meeting in Minneapolis. He succeeds Phil Stocker, Land O'Lakes, as president.

Other officers named at the election were Ozzie Arlien, Minnesota Farm Bureau, vice president; Clint Vinter, Peavey Co., treasurer, and Robert Munson, American Potash Institute, secretary.

Elected for two year terms on the board of directors were Jack Tollesson, Fieldcrest Co., Madison, Wis.; Bill Jones, Northwest Cooperative Mills, and R. L. Gerdes, Rochester, Minn. Mr. Gerdes will fill out the unexpired term of Richard Fancher, Welcome, Minn., who recently resigned from the board.

Healthier Sales Climate Is Seen for Pesticides

By James Hopkins

President

Hopkins Agricultural Chemical Co.

Madison, Wis.

EMBARKING into the 1961 season, the agricultural chemical industry is, in some ways, in a healthier climate than it was a year ago when the cranberry debacle, precipitated by Mr. Flemming and Department of Health, Education and Welfare cast a pall over the products of American agriculture and agricultural chemicals specifically. By the nature of its action the department removed color from Thanksgiving and other holiday tables.

James Hopkins

Turkey did not look as appetizing

Turn to PESTICIDES page 2

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Market Seen as Stable For Fertilizers in '61

By J. D. Stewart, Jr.

Chairman of the Board, National Plant Food Institute, and president, Federal Chemical Co., Louisville, Ky.

LOOKING ahead at the fertilizer situation in 1961, it appears supplies will be ample. By this time, there is reasonable evidence that any major changes yet to be made in agricultural legislation will not be reflected until 1962.

As for the farm market, economists predict that farm cash receipts will remain at about the 1960 level, or about $33.5 billion, and net farm income also should remain at about the same as in 1960, or about $11.5 billion. Changes in the average farm production costs are not in sight at this time.

Thus, in general terms for the country as a whole, the fertilizer industry should be fairly stable during the calendar year 1961.

Some variations are reported on a

Turn to FERTILIZER page 6

SELLING FEATURES INSIDE.....

MERCHANDISING MARKETING SECTION

Zero Delinquency . . .

Collection-delivery system works out favorably for store in Columbus, Ga. Delinquent account losses reduced to practically zero for company. Less than $500 loss in past seven years . . . *Story on page 9*

Soil Samples Pay . . .

Soil-sampling service, plus adequate follow-up, brings great increases in fertilizer sales for Bryan, Texas, store. Bringing farmer into store and discussing profit he can make with adequate fertilization makes sales and creates good-will . . . *Story on page 16*

Profit in Pest Control . . .

Doubling the effectiveness of pest control can mean up to six times the profit for cotton growers, H. G. Johnston tells growers and pesticide sellers. Part-way pest control program not enough . . . *Story on page 9*

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Pesticide Leaders See Changes for 1961; New Products Limited by High Cost Factor

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nor did it taste quite as good. Fear swept the housewives, fear not only of cranberries but of other foods. Only prompt action by some Federal and State agencies, the cranberry companies themselves, and the National Agricultural Chemicals Assn. restored public confidence in the foods they eat. Agricultural chemicals, so necessary to our food production, were shown to be safe if used according to label directions.

That the job was well done is indicated by the fact that retailers, nation-wide, found themselves to be actually unable to fill the demand for cranberries during the past holiday season. The NACA is to be complimented on the active part it played in this phenomenal recovery of confidence.

Our industry cannot afford to relax in its vigilance; 1961 will be a legislative year nationally and in 45 states. The introduction of unsound or unworkable legislation at the State and Federal level will unquestionably occur and must be carefully watched state-wise by formulators and distributors in their respective states and by the NACA in Washington to avoid passage of harmful legislation introduced by unscientific or faddist groups.

From the standpoint of pesticides, we can take a rather optimistic look at 1961. Abnormal weather conditions in 1960 tended to curtail the use of insecticides. A normal weather picture in 1961 should correct the slightly smaller usage of insecticides in 1960.

The 1960 weather situation helped the sale of herbicides and fungicides. They showed an increase over 1959 and this increase will almost certainly continue because of product improvement and the increase in labor cost for the manual control of weeds and plant diseases.

At the level of the distributor and the area formulator, who is almost always a distributor also, there are two things that will bear watching in 1961. Inventories with these two segments of our industry have had a tendency to creep up in the last few years. Obsolete or slow-moving items should be weeded out. Late season ordering has long been a headache with the formulator and distributor.

Business is good as the season wanes and we get low on certain commodities that require truckload purchasing in order to acquire a favorable cost position so we order another truckload or carload costing anywhere from $5,000 to $25,000. The weather turns and the demand stops about the time the chemicals arrive, up goes our carry-over inventory and down go our profits.

Our bankers are unhappy and our warehouse space is short. With the many costly items handled by formulators and/or distributors, our purchasing department is an extremely important part of our organization. Late season ordering probably should be on the hand-to-mouth basis even at the sacrifice of some of the already too narrow spread between cost and selling price.

Accounts receivable are becoming an increasing problem at the area formulator-distributor level. Chemicals are probably the last item for which the consumer pays his dealer. Consequently, the formulator or distributor is the last to be paid by the dealer. By and large, the credit policy of a basic producer or manufacturer of a nationally advertised product is far better and more strict than that of the formulator or distributor, generally being handled on the basis of observance of terms or "no shipments."

In 1961 those of us closest to the ultimate consumer will do well to scrutinize, more carefully, the accounts to which we extend credit and to impress upon dealers the necessity of doing the same to their customers so that we in turn can get our money and observe the terms of our suppliers.

To summarize, the industry, generally, should enjoy a greater volume in 1961. Inventories and accounts receivable will bear close watching, and all important legislative action at the state level should be watched and reported to the NACA.

1961 Sales Depend Upon More Educational Effort

By John F. Kirk
Vice President
Velsicol Chemical Corp.
Chicago, Ill.

A MODERATE increase in overall farm chemical sales is in prospect for 1961. Despite a 2% drop in average crop prices last year, production expanded enough to provide an estimated $400 million increase in farmers' total cash receipts. The combination of a continued cost-price squeeze and cash in the pocket will give farmers a strong interest in, and ability to pay for new and expanded cost-cutting, yield-improving practices. Those of us who are willing to direct a strong educational promotional program in specific terms at the benefits available from using our individual products should share in the $400 million of potential new business and end the year with a sizable increase in sales.

John F. Kirk

Campaign talk to the contrary, it is unlikely that the new administration will take any action that will substantially affect the production of this year's crop. With domestic consumption of farm products expanded as the population grows (about 2% a year) and the prospect of continued government support for farm product exports (to counter the drain on gold), it is unlikely that acreage restrictions will be tightened during the succeeding years of the administration.

The cost-price squeeze is continuing the pressure on the smaller farmer to sell out to the larger, better-financed, more technically competent operator. This type of farmer is most interested in learning about and most willing to adapt new methods. Thus the trend towards fewer and larger farming units should help us expand our markets.

Although the easy sales, high profit period that our industry experienced in the early '50's probably is gone forever, the prospects are favorable for a sounder, if less spectacular, business growth for those who are willing to make the large investments necessary to discover and develop an agricultural chemical, obtain the required government clearances, and then support a continuing education and sales program to establish and expand its use.

Orderly Marketing in 1961 to Improve Trade

By Theodore Riedeburg
Theodore Riedeburg and Associates
New York

FROM a marketing standpoint, the 1960-61 season will again reflect the growing trend of basic manufacturers of toxicants to find distributor-dealer channels capable of doing an intelligent sales and technical service job on new proprietary pesticides.

Ted Riedeburg

Several years ago, the molecule makers began a concerted drive to integrate operations by taking the final step of formulating their patented compounds. Once this die was cast, the position of the regional formulator, who has depended upon a free market for readily available materials such as DDT, Toxaphene, BHC, Chlordane, Parathion, Arsenic and 2,4-D, became increasingly perilous.

Various government recommendations covering the use of the new synthetics during the coming months will further strengthen the programs of producers who select their outlets intelligently. Formulators who are included "in" as distributors of finished products will not feel the squeeze. Those unable to negotiate an arrangement with one or more of the basics who have chosen to bypass them enroute to the grower will have to sell harder than ever to stay on the black side of the ledger.

From the standpoint of the chemical manufacturers, the relatively direct approach to the consumer makes possible, for the first time in the history of the agrichemical industry, an orderly marketing situation. Toxicant prices will reflect the function relationship, one product to another, on a cost per acre basis. Sales, promotion and, certainly, advertising costs will mount but the spread between production costs and distributor prices should assure a good return on investment.

The year of 1961 is bound to be one of progress in which those who have contributed to the science of growing crops and animals better than ever before will continue to prosper along with, hopefully, all who helped make such contributions possible.

Fewer Farms, Improved Management Aids Sales

By W. Scott James
Chemagro Chemical Corp.
Kansas City, Mo.

A NEW YEAR and a new federal administration should not be looked upon as an entirely new and different challenge for agriculture and particularly the agricultural chemical industry.

A new trend in farming has been gradually in progress, especially during the past ten years. Agriculture at the beginning lagged many paces behind industry in realizing a fast growth and the benefits of modern

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GETS CITATION—J. C. Crissey, left, just retired as manager of the Cooperative G.L.F. Exchange Soil Building Division, accepts a citation for service to the soil building and farm chemicals industry from Nyle C. Brady, head of the Cornell University agronomy department. The citation was prepared by Mr. Crissey's friends at Cornell, Rutgers University and Penn State.

J. C. Crissey Retires; Was With GLF 35 Years

ITHACA, N.Y.—John C. Crissey, well-known throughout the fertilizer and farm chemicals industry, has retired as head of the Cooperative G.L.F. Exchange soil building division.

A G.L.F. employee for 35 years, he has been division manager since 1942. Under his direction during the past 18 years, the division has organized a force of field agronomists to aid farmers, inaugurated a research and development department known throughout the industry, established a quality control laboratory and developed and expanded the G.L.F. line of farm chemicals.

Mr. Crissey is president of the board of directors of Fertilizer Manufacturing Cooperative, Baltimore, Md.; a former director of the National Plant Food Institute; and a member of the customers advisory board for International Minerals & Chemical Corp.

He was honored recently for his years of service to the industry at the Northeastern Fertilizer Conference in Hershey, Pa.

Another citation, made earlier in 1960, noted his "exceptional service to G.L.F. patrons, friends and fellow employees." Prepared by Mr. Crissey's friends in departments of crop production, research and extension at Cornell, Rutgers University and Penn State, the citation is signed by 75 college, industry and G.L.F. people.

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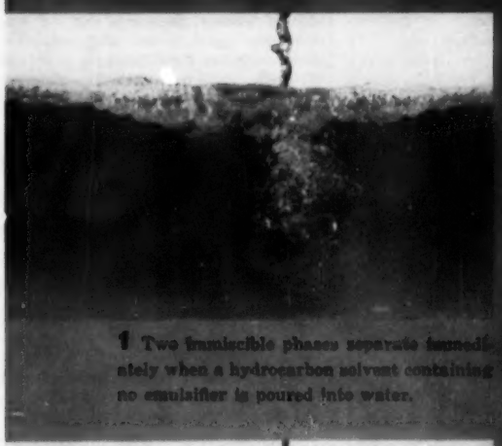

1 Two immiscible phases separate immediately when a hydrocarbon solvent containing no emulsifier is poured into water.

2 The same solvent containing 3% of a poorly balanced blend of anionic-nonionic emulsifiers forms only a fair emulsion in water.

3 The spontaneous "bloom" of a good emulsion dispersing in water results from the perfect balance of an Emcol emulsifier at the same 3% concentration.

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1961 OUTLOOK

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business practices. However, during the past ten to fifteen years, the farm picture has been quietly but significantly changing. The 1960 census of agriculture, by definition of a farm, will show a total of approximately four million farms or a decrease of about 800,000 since 1954.

It should be remembered, however, that the reduction in the number of farms in the U.S.A. does not reflect a change in where people live and what they are doing. Figures will show that there is very little change in the number of acres of land for the purpose of farm production. The change has been primarily in the size of the U.S. farm and is therefore, a change in management of farming and a change in methods of farming that the agricultural chemical industry must recognize and be prepared to serve.

The 1961 farmer will be a better manager, a better thinker; moreover, he will insist on knowing what is new. He will want to use new materials and most important he will need all of the educational service the industry can supply to our changing agriculture.

Supplies of agricultural chemicals to the farm during the coming year should be adequate. During the past year certain intermediates and basic raw materials were in short supply. The industry, however, through business management growth over the past several years is now employing better planning methods and exercising inventory controls in a business like manner so that with the improved business practices of the farmer, sales estimates are realistic and the provision of supplies for the coming year should result in adequate agricultural chemicals for farm consumption.

One disturbing condition is the fact that the farmer is steadily losing recognition and prestige each year. The younger generation assumes that milk comes from a bottle and people have not exercised the necessary concern for the source of their food.

A public relations program to resell the farmer to the nation is needed. Further, farm problems and accomplishments must be fairly put before the city consumers, and any gain in this direction will certainly accrue to the benefit of our industry and the nation.

A Sounder, More Vital Pesticide Trade in 1961

By Paul Mayfield
Vice President, Hercules Powder Co.
Wilmington, Del.

WE LOOK forward to 1961 with a great deal of optimism. In an industry as complex as agriculture, including agricultural chemicals, there are always problems that exist and the possibilities of an unexpected crisis just around the corner. The pesticide industry has learned to live in this kind of an environment. This very atmosphere has produced a breed of management that is unique in American business. These tough, resilient, ingenious . . . and intelligent men provide a reservoir of talent that is a powerful asset to this industry. They have proved they can produce during adversity. Granted a favorable business climate this strength can lead to great new accomplishments through the coming year.

Paul Mayfield

The effects of the Delaney Amendment have undoubtedly slowed the growth of the pesticide industry. The added expense of research, resultant needs for larger staffs, and the dimmer prospects for an early return on investment capital have kept many promising new products from the market place. Unfortunately, it has probably caused some manufacturers to turn away from the general field of agricultural chemicals.

Fortunately, however, completely adequate materials are available and through their proper use we can assure our own supply of wholesome foods for the growing population and still have quantities to export to the underfed people throughout the world.

While the pesticide industry has slowed from a headlong sprint into the chemical age of farming to a plodding, unglamorous walk, many of us have had time to build a solid foundation—particularly in research. It is reasonably certain that some opportunistic manufacturers who may have been out for the fast buck abandoned any plans they entertained to enter the pesticide industry. It is my prediction that the industry will emerge sounder, stronger, and more vital than ever.

While the industry is working hard on new products, we have had time to do more work on the fuller utilization of the very excellent chemicals that have been around for some time. A few years ago the farmer was dependent on one chemical or another to solve his insect control problems. Now we are learning more and more about the results of combinations of chemicals. A "synergistic" effect has been proved with certain combinations that has been more effective than some of the promising chemicals that reached the farmer. A great deal of work still remains to be done on proper application and timing of applications.

We believe that a lot of progress has been made with the farmer himself. More and more farmers are willing to cooperate in demonstrations with basic manufacturers and formulators. There is no substitute for such demonstrations and often more information is gained in one season than could be obtained in years of laboratory work alone. Also, farmers seem to be accepting pesticides as a necessary part of their business rather than as an emergency measure when their crop is in danger.

Looking ahead, there appears to be a big potential in the export market. While foreign manufacturers are certainly not asleep, American-produced chemicals have a definite part in the world agricultural revolution that is just beginning to be felt. Large areas of the world will need our products, and can benefit from the storehouse of information we have accumulated on pesticide use.

Progress may come slowly at first, but the prospects appear to be worthwhile.

Florida Pesticide Sales Show Promise for 1961

By Ray H. Cooney
Vice President
Flag Sulphur & Chemical Co.
Tampa, Fla.

STRICTLY from the standpoint of agriculture here in the State of Florida, we who are in the formulating business are primarily concerned with two phases of agriculture — namely citrus and vegetables.

Ray H. Cooney

In September, the State of Florida was visited by a very destructive hurricane, the results of which have materially affected the overall outlook on citrus. Previous to the hurricane, we had the prospects for the largest crop in the history of our citrus industry. However, Donna resulted in the crop estimate being reduced to such an extent that we now feel that the entire citrus crop can be moved without difficulty—and it is very probable that the over-all returns to the growers for this year's citrus crop will be greater than would have been otherwise.

We are quite confident that, as a result, the movement of necessary pesticides on citrus will be materially enhanced because the grower, anticipating good returns for his crop, will endeavor in every way to protect both the quality and quantity of the remaining fruit, hoping to make it top grade and merchandisable either as fresh fruit or as high-grade concentrate fruit.

Weather conditions permitting, the normal build-up of insects and diseases which plague citrus should result in a good movement of agricultural chemicals to protect this crop.

In our vegetable areas the results of the hurricane either eliminated or materially reduced the planting of many of our fall crops and at best resulted in late plantings, and quite naturally later harvesting of those crops in areas where planting was still feasible.

However, weather conditions have been ideal for the planting of our winter crops which are grown in abundance from the extreme southern area around Homestead, up the lower East Coast and into the Sanford-Zellwood vegetable-growing area. As in the case of citrus, weather conditions permitting, there should be an excellent mid-winter and spring potential movement of agricultural chemicals that should be encouraging to all formulators and distributors of agricultural chemicals.

It might be well to note, both in the case of citrus and vegetables, that there is increasing emphasis being placed on "read the label" and absolute adherence to the information contained thereon, so that highly-toxic pesticides are used in accordance with the recommendations of the manufacturer and the Food and Drug Administration.

We strongly feel that the continued utilization of these new materials in our spray and dust programs can be successful only by strict adherence to proper and judicious application.

In summary, I would have to evaluate 1961 in agriculture in Florida as having prospects for an exceedingly good year, and only adverse weather conditions or a severe set-back in our nation's economy could materially alter this outlook.

FERTILIZER GROUP—Appointment of a national fertilizer group has been announced by M. E. Wierenga, vice president and marketing manager of the Ortho Division of California Chemical Co. The group, formerly concerned with the company's western operations only will now operate in the fertilizer marketing area of the northern U.S. Members of the newly appointed group comprise Dr. M. H. McVickar (left), chief agronomist; L. R. Hamilton, assistant national manager, fertilizer sales, and William E. Jaqua, national manager of fertilizer sales. The move is directly connected with Ortho's entry into the fertilizer marketing area of the northern states. The firm's $22 million plant now under construction at Ft. Madison, Iowa, is scheduled for completion late in 1961. Other Ortho plants are at Richmond, Cal., and Kennewick, Wash.

Market Outlook for New Year Appears Improved

By Ivor Burden
Vice President
United Heckathorn, Inc.
Richmond, Cal.

THE MAJOR problem confronting the agricultural chemical business in the West is the effects of the Miller Bill. Within the State of California, there are some 3 million acres of alfalfa hay throughout our major agricultural valleys and drift from treatment of vegetables, fruit and field crops is an ever-present problem. The zero tolerance in milk on all insecticides and the zero tolerance on alfalfa hay on chlorinated hydrocarbons in 1960 in California, drastically reduces the use of chlorinated hydrocarbons and shifts to organic phosphates that have a hay tolerance. The products chiefly used are: Malathion, Dylox, Parathion, Dibrom, Diazinon, and Phosdrin.

Ivor R. Burden

These phosphates are higher in cost and have to be used more frequently because of short residual toxicity to insects.

NEW PRODUCTS—The Western farmer accepts new products readily. Among the new developments are the following:

DBCP nematocide emulsifiable forms will find large usage on established grapes, berries, peaches, walnuts, prunes and citrus and on annual

crops, such as cotton, tomatoes and beans. Data from experiment stations indicates that crops grown in sandy soils with high nematode populations will double yields with a single treatment, lasting 2 to 3 years, at costs of $30 to $45 an acre on tree crops and $15 to $20 an acre on annual crops.

Randox, Vegadex granular products and Endothal will be widely used as preemergence weed killers on most vegetable crops. Carbyne and Avadex are new materials for wild oat control in grains, peas and flax. Amizine is a new herbicide containing amino triazole combined with Simazine for use as a soil sterilant and for annual weed control. Chlorobenzoic acid weed killers new market for perennial broadleaf weeds, while Dowpon will find expanded use in orchards and vineyards and along irrigation ditches for perennial grasses.

"B.T."—bacterial insecticide, will be used in 1961 on vegetable crops for looper control. Sevin and Guthion will be prominent in codling moth fruit programs.

EXPORT MARKET—A major export item is still DDT 75% wettable, and this is definitely increasing in 1961. In California, DDT grinders shipped to the Far and Near East some 40 million pounds DDT 75% wettable during 1960. Other export items include insecticide formulations of Toxaphene, Parathion, Malathion and Endrin for Pacific areas.

MARKETS—California has some $150 million worth of agricultural chemical business, broken down roughly as follows:

$100 million—Fertilizers
10 million—Weed killers
40 million—Ag chemicals (insecticide, fungicide)

This California market is about 20% of the national total and is expected to increase about 10% a year until it doubles by 1975 to some $300 million. This expected increase is the same increase forecast for the national market for 1975, of $1 billion for agricultural chemicals and $2 billion for fertilizers.

SUPPLY—There are no problems of supply with the possibel exception of Sevin, but a new plant to be completed in early 1961 will no doubt make Sevin generally available in good supply.

Few New Pesticides, But Good Ones Seen for 1961

By Mel E. Wierenga

Vice President and Manager, Marketing
California Chemical Corp.
Richmond, Cal.

THE MILLER amendment, as directed toward the use of pesticides in growing agricultural crops, combined with the Delaney clause, now places far more stringent controls on the use of pesticide products than ever before in history. The result of these two legislative acts has caused sharp cost increases in all areas of research, product development and marketing. There is no question that prices of all pesticides will have to increase to reflect these costs.

Mel E. Wierenga

What about the new products in the pesticide field? We at Ortho expect a minimum number of new products from all agricultural chemical research, but we also expect and believe that all new products placed on the market will be good ones. They will have to be superior in quality and must sell in quantity to justify all of the increased costs. In most cases pesticide supplies will be manufactured in sufficient quantities to handle domestic and export needs. The chemical manufacturers and chemical formulators will be trying to make more sales to take up the slack in diminishing profits and keep plants running to capacity.

To handle the ever-increasing supplies and effective new chemicals, we anticipate growing markets in the continental United States and rapidly expanding world markets. These markets will be available to all, but they will be attained only by aggressive companies offering a broad range of services to the reseller and consumer.

With the increasing technology of agricultural chemicals, both at manufacturer and grower level, the day of the "order-taker" and "price seller" is gone. Constructive, hard selling with technical know-how is a must in the future of the agricultural chemical salesman.

It is inevitable that more land will have to be placed into food and fiber production to meet the growing population requirements. Not only will land usage increase but production increase per land used will jump in rapid sequence.

We anticipate rapid advances in agricultural engineering, this because of the diminishing supply of farm labor stepping up demand for farm machinery. Growers are learning that automation with fine new chemicals can bring increased profits.

Fertilizer and pesticide application equipment and methods are being improved. These, and product developments, show that the farmer is changing his thinking from saving money to making money. This change is being noted by the increased usage of chemicals, machinery and even the money-lending agencies. The capital investment is growing at each farm unit, but with this growth comes increased production and decreased cost on produced units of farm supplies.

We view 1961 as an extension of the trend to greater regulation of the use of chemicals in agriculture, but with this I am optimistic that the grower will further expand his use of chemicals to keep pace with the increasing costs of producing crops.

Wisconsin Fertilizer Organization Elects

MADISON, WIS.—R. B. Baldridge, Stevens Point, manager of the Kickapoo Fertilizer Co., was elected chairman of a newly organized Wisconsin Fertilizer Assn., at a meeting here recently.

Other officers elected were Ray L. Pavlak, Deerfield, vice chairman, and W. M. Imhoff, Madison, secretary-treasurer.

The new group will seek to encourage research and to promote the use of fertilizers. Membership is open to fertilizer manufacturers in the state.

What Does 1961 Promise to the Trade?

1961 FERTILIZER OUTLOOK

Continued from page 1

regional basis by on-the-scene fertilizer industry observers. For example:

IN THE SOUTH—Increasingly favorable attitudes as a result of more widespread educational programs and the general politico-economic picture are reported. Plant nutrient consumption likely will increase over last year.

IN THE NORTHEAST—No marked changes in farmers' attitudes are foreseen, but the general trend toward more efficient crop and especially pasture and consequent livestock and dairy production is expected to continue.

IN THE PACIFIC NORTHWEST—Many farmers say they are "looking to research" to continue to help them return a net profit at the end of the year. Some say they're not looking to the new Administration for help, and farmers in the small fruit and tree fruit industries appear apprehensive about the action the labor unions are taking to unionize the migrant and other agricultural laborers.

IN THE WEST—Farmer attitude toward proper fertilizer use is becoming more positive with growers who were previously low-level users. Banks, in all areas and especially in the west, are employing agricultural agents or experts, usually agronomists, to give personal supervision to farm customers to increase efficiency and encourage optimum use of production factors, including fertilizer. On the other hand, increasing costs of production, such as labor, machinery and marketing, are causing concern over means of increasing yields to cover costs and to maintain net income.

IN THE MIDWEST—A substantial crop outturn has put fertilizers in a favorable position for 1961. Weather conditions have permitted the harvesting of late planted corn. The area is just beginning to feel the impact of the National Plant Food Institute's Intensified Soil Fertility Program, which is an educational effort emphasizing more efficient farming. In fact, progressive farmers are looking to efficiency in farming to solve a larger share of their problems. More farmers are using fertilizer, and more at optimum levels. An increase in fertilizer consumption in this region in 1961 is likely.

One well-informed, widely-traveled industry representative added this note: More and more farmers' are identifying fertilizer with efficient production rather than with over-production. Farmers are beginning to realize over-all food production must increase annually and that current surpluses in two or three crops must not be allowed to upset a sound agricultural program which should provide at a profit for the farmer the food the public will require.

No serious difficulties are anticipated in the field of transportation unless a strike of substantial proportions should occur. Increased freight rates as recently approved by the Interstate Commerce Commission in Ex Parte 223 may cause some further diversion of tonnage from higher to lower cost forms of transportation. This situation also could result in some shifts in the general distribution pattern of the industry.

At this time it may reasonably be said that the point of most concern is the general business condition in which this industry will have to operate during the first half of the new year. The policies of the new administration, as they may be developed and made effective, will have an influence on this point and since they are yet in the making, a time of watching and waiting is indicated.

End of Price-Cutting is Seen as Means to Profit

By J. E. Totman
President, Summers Fertilizer Co. Baltimore, Md.

GENERAL prospects for our mixed fertilizer business in 1961 appear reasonably good. Farmers in the area in which we operate have harvested excellent crops. Marketing conditions are not materially different from a year ago. The Future Commodity Markets indicate a stable and profitable return. Improvement should prevail in those areas where sugar beets or cane are grown. Competition is expected to be as keen as a year ago. However, there seems to be a greater awareness on the part of manufacturers that competition based solely on price does have its limits. Improved quality, service and more attractive packaging, along with more intensive advertising of specialty analyses less susceptible to price-cutting, are becoming more evident.

J. E. Totman

Costs all along the line are increasing, particularly labor, equipment replacement and transportation charges. The increase in rail rates, while nominal, takes a sizeable bite percentagewise out of what's left as net profit per ton. In some areas, improvement in the activities of itinerant truckers prevails. On occasion, these alleged dealer-salesmen have created demoralizing practices. Federal and state authorities, where violations have occurred, have been slow to apply correctives.

In general, we feel sound progress can be developed if all interested parties will adhere strictly to their own published policies, which is to say, control their own sales rather than let outside interests establish unprofitable terms and conditions. During the past year, there have been a number of mergers and consolidations, along with the liquidation of o'd and newly-established companies of various sizes. This trend should insure a much-desired improvement in the stability of our future price structures.

We see no signs on the political horizon that will affect the 1961 fertilizer picture. Supplies of certain raw materials are not as plentiful as a year ago. There appears to be a better balance between demand and supply, temporarily at least. Labor disputes have created some temporary shortages. Expansion in the P_2O_5 fields may give all concerned some indigestion before the higher level of consumption is reached.

Much has been said about the population explosion and its effect upon food consumption. On a year to year basis, we don't believe that this will have much effect on fertilizer consumption. It will be more of a gradual increase, hardly noticeable in some areas, although ten years from now the over-all total will likely show a healthy increase. Changes in the eating habits of the population may appear in 1961 should this be a depression year, as some prophesy. Under such conditions, increased consumption of cheaper foodstuffs prevail and it is these foods that consume the most fertilizer—wheat, corn, potatoes and other low cost vegetables.

High cost processed vegetables may be in for a decline but, here again, they should not be sufficiently marked to affect fertilizer sales so much as they will affect the food distribution problems.

The attitude of the farmer is, as always, up and down. Small farms are giving way to larger operators and syndicates. These latter will likely use, in the aggregate, more fertilizer than the individual smaller farmers did because they are in better position to spend more dollars for fertilizer. Also they consider such expenditures a necessity. We look for an increase in application per acre as well as greater concentration of plant food per ton of mixed fertilizer.

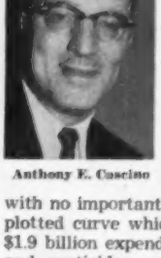
The development of crossroad blenders is apparently expanding. This has created serious problems for those companies who have investments in sizeable plants originally intended to service the areas now being taken over by the so-called blenders. In the end we believe, if the blenders can give value received, such may become a definite trend that all of us must take into account. The use of liquid fertilizer doesn't seem to be gaining much headway in the territories in which we operate. Bulk distribution is increasing.

1961 will be full of interesting problems but the result in the lower right-hand corner should be a little better if those involved realize price cutting does not increase consumption of plant food but rather the size of the red figures.

1961 Sales Depend Upon Much More Than 'Price'

By Anthony E. Cascino
Vice President, Marketing Division, International Minerals & Chemical Corp. Skokie, Ill.

THE OUTLOOK for the fertilizer industry during 1961 is not clearly defined at the moment. In the first place, complete industry returns on 1960 volume have not been finalized so that there is as yet no base against which to compare the possibilities for 1961.



Anthony E. Cascino

All indications, however, point to a continuation of the steady climb in the use of plant food nutrients, with no important deviation from the plotted curve which sees the present $1.9 billion expenditures for fertilizer and pesticides reaching $3.5 billion in 1975.

Actually, there are many favorable indications for fertilizer sales in 1961.

Net farm income was up slightly in 1960 but the more important barometer of cash receipts from 1960 crops was up about 5%. Coupled with these financial factors for Southern manufacturers is an increase in cotton acreage allotments of about one million acres, a six percent increase over 1960.

From a production and marketing standpoint, the year 1961 should further emphasize certain increasingly important trends established within the last decade as a result of the changing farm picture.

There has been more than weather behind the record-breaking production of the past few years in the face of an actual reduction in the number of farms.

This increased production is a direct reflection of the increasing application of technological developments as small, less-efficiently managed farms become a part of larger farms under the skilled management of men who recognize the value of these new agricultural tools.

There is, in this growing awareness of the value in modern agricultural technology, a knowledge of—or a willingness to learn of—the returns to be derived from the use of properly constituted plant foods. For the manufacturer, then, it provides an opportunity to sell more than a "standard" product, to have much more than price as a major selling point.

This area of opportunity should be greater than ever in 1961 for a new peak in the acceptance of the value of trace elements, for example, and for other special features which make a fertilizer mixture more valuable to the knowledgeable farmer.

This rapid adoption of advanced technology by farmers presents an opportunity and a challenge to the marketing arm of the fertilizer industry.

There is every indication that only the most modern marketing techniques can keep pace with the demands for information about new fertilizer products and their most productive use.

The manufacturer who recognizes the challenge and moves to meet it with the product and the marketing technique it requires could make 1961 an important milestone in his company's history.

'61 Trend Toward Larger Farms Favorable Factor

By George H. Serviss
GLF Soil-Building Service, Ithaca, N.Y.

MAKING short term predictions of fertilizer tonnage is somewhat hazardous. Anyone who does so is sticking his neck out to some extent. Nevertheless, it is fun to guess so long as the "guesser" and other people do not take the guess too seriously.

George H. Serviss

Here in the Northeast, fertilizer usage in terms of actual tons, has been on a plateau for the past four or five years. The total consumption of plant nutrients has shown an increase, however. This increase has been due largely to increased concentration of mixed fertilizers. It has not been great, but it has been steady.

In New York, New Jersey, and Pennsylvania, last spring was the worst planting season that most of us can remember. It was cold, wet and late. This piled up volume into an unusually sharp peak. It also resulted in some decrease in acreage of crops that use substantial amounts of fertilizer. This, I feel, was the most important factor that held down tonnage.

Another factor that cannot be overlooked is the "Soil Bank." A substantial amount of land has gone into this. At first it appeared that only the poorer land was being "banked," but this proved to be untrue. Good land is being signed up, too. In parts of the Northeast, a significant amount of good farm land is being taken out of production by super highways, building developments, etc. This is not a total loss, since some fertilizer is still used on it, but the volume has not as yet built up to what was used when it was being farmed.

There is much speculation, of course, on the effect of the new ad-

ministration on farmers' buying attitudes. It is too early to speculate on this at present. So far, farmers seem to have adopted a "wait and see" attitude. This could change by spring. My own opinion is that most farmers have given up any great hope of real help from politicians.

The trend to larger farms and fewer farmers is taking place here as in other parts of the country. These larger farms must be more efficient since they are in business and are no longer farming solely as a way of life. These farmers, I feel, will use more fertilizers.

From reports coming into me and my own observations, I sense a little more optimism on the part of our farmers than has been evident for the last couple of years. There are exceptions, of course, but if it is true, it is a favorable factor.

To sum it up, if we have a good planting season this spring, I expect to see a moderate increase in fertilizer tonnage, at least in plant nutrients sold, if not in total tons. For the long pull, if we can find some spark to get action on grassland improvement, we will have some real increases in usage.

There is no shortage of materials, the industry is out to sell and explore every means of getting fertilizer on farms. It should be an interesting season.

Higher Farm Income of 1960 Seen as Good Omen

By W. R. Ashburn
President, Smith-Douglass Co.
Norfolk, Va.

THE 1959 decline in crop income resulted in reduced farmer buying in the early part of 1960, and before many farmers had decided on their crop program for that year, extremely adverse weather prevailed in many commercial farming areas and it continued well into the normal planting season. Short farm cash receipts and application difficulties due to weather caused many farmers not to order quantities which would afford maximum immediate crop yields, and in areas where adverse weather continued through the spring much plant food which would otherwise have been consumed was never ordered. Volume demand was limited to a short time period, and this increased producers' distribution problems and their shipping costs.


W. R. Ashburn

Many producers had scheduled the quantity of their production for 1960 either without knowledge of, or without regard to, lower 1959 farm income and its probable effect on buying; and a further consequence was that as volume shipments failed to materialize at normal shipping dates in 1960 the anxiety of these producers to liquidate inventories resulted in much price instability, reducing the already thin profit margins to the point where in many areas they were not non-existent.

It would appear that there are prospects for better volume in 1961. Despite the 1960 conditions described above, crop income and cash receipts from crops were up over 1959 by perhaps 5%. Allowing for the normal time lag between increases in farm income and stepped-up buying by farmers, it would seem that the higher farm realized in 1960 would have some favorable effect on fertilizer purchases by February-March of 1961.

While weather uncertainties are always present, there is no reason to suppose that the extremely adverse weather conditions of February, March and April, 1960, will exist in the same degree in 1961. The marked trend toward larger farming units has been accompanied by a a broader appreciation of the immediate benefits to be obtained from the application of plant foods in adequate quantities. There appears to be less uncertainty among farmers concerning what they will plant in 1961 than was present at this time last year; and farmers attitudes are qualified in some degree by the uncertainties concerning the farm program which the newly elected Democratic administration will sponsor. Yet, the general feeling seems to be that no limitations will be immediately applied to affect farm income adversely during 1961.

Whether the fertilizer trade will enjoy better profits in 1961 is more problematical than is the question of the volume of plant food which the trade will distribute. Despite an abundance of raw materials available to mixed fertilizer producers, the cost of these materials has substantially increased over the prior year; there has been an increase in labor costs of considerable magnitude; and the chaotic pricing conditions which existed in 1960 have carried over to the end of the year.

There is little indication that the price structure will be any stronger in 1961 than it was in 1960. Downward revisions of rail freight rates occurring during the last 18 months permit producers a wider and more orderly distribution and in some slight measure offset the increases in production costs, but the total capacity for production is undoubtedly far beyond what the total consumption will be.

At this date, competitive pricing conditions have reduced the thin profit margins of 1960 despite strong efforts toward increased efficiencies in production and distribution. There is no indication that farmers will place their orders prior to the time when they actually require the application of plant foods, and since perhaps 70% of the total consumer demand will be delivered in a period of about 4 months, it is probable that shipping and delivery costs will be higher than in 1960.

Even with the prospect of increased volume, no substantial increase in industry profits is in prospect until marketing policies are directed toward profits rather than volume; nor until there is a more general desire by producers to price their products on a basis which allows them some realization after provision for the costs which they will undoubtedly incur.

Research and Marketing Key to Increased Sales

By Roger W. Roth
Agricultural Marketing Services
Glenview, Ill.

DESPITE the prospect of political maneuvering, further enforcement of restrictive legislation, and stiff competition for the farmers' dollar, the use of fertilizers and pesticides will increase in 1961. The extent of their growth will depend a great deal on the success that manufacturers and reprocessors have in presenting to farmers the economic gains and other favorable performance characteristics of these products.


Roger W. Roth

Farmers, potentially, will be better customers during the first half of 1961. They have harvested one of the biggest crops on record in 1960. Prices for principal farm commodities such as cotton, rice, milo and cattle are strong and are expected to continue this way through the early part of this year. Corn prices are predicted higher in early spring.

This favorable farmer economic outlook, plus reports that the new administration expects to continue efforts to reduce surplus with no immediate farm policy changes, means more stable conditions later in '61.

It is predicted that there will be approximately a 10% increase nationally in the use of pesticides. Sales of some products will show substantial gains, while others will be dropped slightly.

Use of chlorinated insecticides will drop some as a result of growing insect resistance. This will be especially evident in the cotton areas where phosphate insecticides will receive more widespread usage. General use of phosphate insecticides should exceed 1960 consumption by 20%.

Substantial gains in the use of soil insecticides and pre-emergence herbicides will spark the early season movements. A conservative estimate nationally for 1961, would find 10% more farmers using soil insecticides and approximately 25% more using pre-emergence herbicides.

Recent research developments will play an important role in a predicted 15% increase in sales for the fertilizer industry. High analysis granular fertilizers, highly adaptable and financially sound, will find wider adoption in all areas. Development of the ammonium phosphates with their lower cost per unit of primary ingredients and favorable agronomic values are in line with farmers' demands for more production at less cost. Of special note will be prescription type fertilizer formulae — both granular and liquid — developed for local and regional markets or specific crops.

Increased enforcement of residue tolerances and compliance to various interpretations of the Food and Drug Administration will not seriously hinder the sales of established pesticides. They will, however, slow down or even prevent the introduction of newer products.

There will be higher sales of various specialty chemicals having limited markets. This is especially so in the tobacco market, where growers in 1960 received some of the highest prices for their crops since 1953. Other products which will show favorable sales increases include the trace minerals, soil fumigants, fungicides, chelating agents and certain tailor-made formulated fertilizers and pesticides selling in the lawn and garden market.

Undoubtedly, there will be much stronger competition for the available farmer dollar in 1961. This competition will come from agricultural equipment manufacturers, feed manufacturers, from farm construction builders and truck and automobile manufacturers. These industries are formidable competition without consideration being given to pressures from household and consumer goods manufacturers.

To meet this competition for a greater share of the available dollar both fertilizer and pesticide manufacturers will be selling the economic benefits of their products such as labor saving, increased yields, reduction of losses, ease in handling and others. These educational promotional programs will be keyed primarily, and

rightfully so, to farmers' demand.

As an added effort, substantial increases in services will be offered. Recent farmer surveys have shown that dealers are a much respected source for all types of information on fertilizers and pesticides. Services by both manufacturers and processors will be directed, to a greater extent, toward further education of these dealers on the merits of the various products.

Both fertilizers and pesticide sales will show substantial increases in 1961. The degree of success in obtaining these increases will vary because of legal restrictions, success in merchandising new research developments and the ability of industry to do more "down on the farm" selling.

'Sell Enuf' Fertilizer In '61 to Make Profits

By Walter S. Colvin
Director of Agricultural Sales
Nitrogen Division
Allied Chemical Corp.
New York

GENERALLY speaking, our 1961 sales outlook is optimistic. We expect an increase in fertilizer consumption this year based on our own analysis of the situation as well as on reports received from field sales people who are in closer touch with local conditions.

Walter S. Colvin

With higher land values, taxes and other costs, most farmers are concentrating on increasing their profits. To do this they must use more plant food per acre.

Fertilizing liberally is one of the most economical ways farmers can raise yields and profits. Last year, many leading farmers used more than 200 lb. nitrogen an acre in addition to adequate amounts of phosphate and potash. Many farmers are realizing they must use adequate amounts of plant nutrients to get maximum yields.

Farmers had a good year in 1960, which should mean higher sales to the farm market in 1961. Crops in the Southwest, Southeast and Midwest responded well to fertilizer treatment last year and produced bumper yields. Good weather last fall permitted a good harvest. Advances in the use of modern irrigation methods, and an ever-increasing use of herbicides and insecticides have also benefited farmers.

Greater profit for farmers benefits everyone selling to the farm market.

The fertilizer industry in 1961 will pay particular attention to improving its profit position, because it takes profits to sustain the important research and marketing functions which help the individual farmer make a better living for himself and his family.

The industry as a whole, for instance, well appreciates the competitiveness of the market, and each producer is taking its own measures to insure good sales. A good example in my company is our "Sell Enuf" program for dealers. This will help to provide a good income for those who market our products.

Another hopeful sign for the industry is the trend toward thinking of profits rather than just tonnages. Our object should be to provide adequate storage for industry products.

In 1961, in place of giving lower prices during the off season to encourage consumers to take products during that period, more money will be invested in facilities to give customers the products they need when they need them. Most everyone will agree that pricing problems diminish and profitable sales can best be made when the fertilizer season hits.

New Administration to Bolster Farmer Income

By T. F. Bridgers
President, Farmers Cotton Oil Co.
Wilson, N.C.

WE ARE looking forward to a good fertilizer season in 1961. Every indication points to ample supplies of materials of all kinds.

T. F. Bridgers

The acreage of crops is expected to be about the same as last year.

The farmers in this section have had a reasonably good year in spite of the fact that Hurricane Donna did considerable damage to cotton and corn. Under the new administration we believe the farmer will be able to share a little better in the national economy than he has in the past.

From every standpoint, 1961 should be an interesting year. We look for more competition—less profit—better fertilizers—higher crop production.

We are in a great business—the fertilizer business.

Nitrogen Supplier Sees Good '61 Sales Climate

By Robert Q. Parks
General Manager, Nitrogen Products Division
W. R. Grace & Co.
Memphis, Tenn.

IN PROJECTING the operations of the Nitrogen Products Division for 1961, our group has made the following assumptions: (1) Industrial production will decline 10% to 15% during the first half of 1961. This is in line with current economic projections.

Robert Q. Parks

(2) There will be no important recovery during the second half of 1961. This is more conservative than expert opinion, which forecasts a substantial recovery during the second half of 1961.

(3) Farm income in 1961 will hold at about the same level as in 1959 and 1960, which view is generally shared by agricultural economists.

There seems to be general agreement that the outlook for sale of agricultural chemicals during 1961 is somewhat more favorable than for industrial products. Nitrogen fertilizer use increased 17% during the year ending June 30, 1959—despite no increase in farm income. The major part of this increase was in straight nitrogen materials, of which anhydrous ammonia is the largest single source. Since our program puts major emphasis on nitrogen products for agricultural use, we have felt safe in projecting some sales increases to agriculture.

New Plant

FOWLERVILLE, MICH. — Mid-State Fertilizer Co. is building a new fertilizer plant on property at Shepherd, Mich., owned by Clayton Klein of Klein Fertilizers, Inc., of Fowlerville, Mich.

James A. Parsons of Shepherd will manage the new plant, to be equipped with both bulk and bagged facilities, with production capacity of 20 tons per hour. Most of the equipment is being supplied by Burton Mixer & Mfg. Co. of St. Johns, Mich.

Application Problems for Agricultural Chemical Products Studied by Engineers

MEMPHIS, TENN.—Problems and progress in application of agricultural chemicals were explored during two sessions on the program of the American Society of Agricultural Engineers here recently. The meeting drew some 1,200 engineers from all 50 states and some 12 foreign countries.

Presiding over one session was Norman B. Akesson of the agricultural engineering department, University of California, and vice chairman of the society's agricultural chemical application committee. Frank Irons of the U.S. Department of Agriculture, Wooster, Ohio, and chairman of the application committee, headed the other section.

Mr. Akesson and Wesley Yates, also of the University of California, pointed out that drift and residue of pesticides are two ever present problems with which today's farmer must contend.

They said these were main points to consider in controlling drift and residue: (1) Several materials function best as dusts and poor control may occur when a spray formulation is used; (2) whenever chemicals are likely to drift, spray equipment should be of a type that gives medium to coarse droplet spectrum from either ground or aircraft equipment; (3) microclimatology of the area in which the chemicals are being applied should be well known.

The increasing use of high fertilizer rates is posing a challenge to engineers—that of designing precision placement equipment to prevent crop damage. J. G. Futral, head of the agricultural engineering department, Georgia Experiment Station, said commercial fertilizer hoppers may vary as much as 50% in their output rate even when a uniform material is used. Research work is now being done on a design for metering hoppers. The largest error yet found for any increment of row is 2%.

Two University of Missouri engineers, Dr. Leroy Day and Maurice Gebhardt, reported on work to shield soybean plants from damage due to post-emergence spray treatments. They said that even though shielded spray treatments have not always proved superior to mechanical cultivation, they have been found appropriate during wet seasons when tillage must be delayed.

Lambert Wilkes of Texas A&M College told the group effective control of cotton boll weevils and bollworms can be maintained with low rates of total spray material applied with simple nozzle arrangements. He said control can be as effective with low rates and simple nozzles as with higher rates and complicated nozzle arrangements, provided the same amount of ingredient is used.

Speaking on fertilizer and seed placement requirements for vegetables, William L. Hollis of the University of Maryland pointed out that the requirements have become more important with the advent of harvesting these crops mechanically. Surveys, he said, during the past decade have shown that in nine out of ten studies, results favored band placement of fertilizer over broadcast methods.

A picture of the effects of defoliation, weather and mechanical picking on cotton quality was presented by E. B. Williamson and J. A. Riley, Delta Branch Experiment Station, Stoneville, Miss. Defoliants, they said, must be applied on a date that will balance the quality of an early harvest with the quantity of a late harvest. Daily the pickers must operate during the hours of correct seed cotton moisture content in order to minimize staining, moisture and trash problems.

"The correct timing of these two operations will make defoliation and picking most effective and will in turn preserve the many inherent desirable qualities of the harvested lint," the engineer and meteorologist said.

PCA to New Location In New York City

NEW YORK—Potash Company of America has announced it will move its general sales office from Washington, D.C., to New York as of Feb. 1, 1961. PCA has also announced a number of personnel changes effective on the same date.

PCA's new location, 630 Fifth Ave., is in the International Building in Rockefeller Center, between 50th and 51st Streets. The new telephone number is LT 1-1240, and its telex number, NY 1-5386.

The personnel changes involve four persons: J. Robert Mell and Frank H. Kennedy, assistant general sales managers; Robert B. Lenhart, midwestern sales manager, and F. Edward Smith, Jr., who will take over the northeastern sales territory.

Mr. Mell will be responsible for sales in the southern half of the country. He attended Emory University and is a World War II veteran of the army air force. He joined PCA in 1946 as a sales representative.

Mr. Kennedy, who will handle sales in the northern states, is a graduate of Catholic University and is a Marine Corps veteran of World War II. He joined PCA in 1950 and was midwestern sales manager before his new assignment.

Mr. Lenhart joined the company in 1957 as northeastern sales representative after many years of experience in the fertilizer industry.

Mr. Smith, with PCA since 1938, came to Washington in 1956 as administrative assistant. He will continue to make his headquarters in the Washington-Baltimore area.

Fire Ant Program to Continue in Georgia

ATLANTA, GA. — Phil Campbell, agriculture commissioner, and Gov. Ernest Vandiver said recently that the campaign toward eradication of fire ants in Georgia would be continued. Both answered a critical presentment by a pro-fire ant grand jury in Savannah.

The Savannah jurors claimed that Georgia is spending about $1 million a year ($300,000 state and $800,000 federal) on its fire ant eradication, and added that chemicals used in the program are injurious to wild life, human beings and property, and urged Gov. Vandiver to stop the program. They said the only things fire ants harm "is other insects."

But Mr. Campbell said at a press conference later that "they must classify human beings as insects."

Mr. Campbell showed newsmen letters and documents from the State Game and Fish Commission and other sources testifying there was no evidence of anti-fire ant chemicals harming wild life.

Boost in Minnesota Hopper Numbers Seen

ST. PAUL—Increased grasshopper infestation over much of Minnesota, especially in west central and extreme southwest counties, has been reported by Hart Graeber, U.S. Department of Agriculture plant pest control inspector with headquarters on the St. Paul Campus of the University of Minnesota. His organization has recently completed its annual adult grasshopper survey.

The increase is marked by a gain in numbers of two large, heavy feeding species, known as the "two-striped" and "differential" hoppers.

SPECIAL MERCHANDISING SECTION

BETTER SELLING

MARKETING NEWS AND FEATURES

Soil Tests, Proper Fertilization Boost Tobacco Farmer Income

ATLANTA, GA.—Low income tobacco producers in Greene County, Tennessee, have found the key to more farm income. By following soil test and other college recommendations, a group of farmers working with J. O. Cunningham, county agent, increased their production of burley tobacco by 438 lb. per acre above their previous 3-year production average. These demonstrations were part of the Tennessee Efficient Crop Production Program that was designed to help the farmer find a way to raise his net farm income in order to stay in business in the face of steadily rising costs of production.

To determine how low-income farmers in his area could increase their profits, Mr. Cunningham went to the ASC Office and selected nine farmers that had a history of low production—each from a different community. While he was there, he also checked the yields of other farmers in the community so that he could use their records as a production bench mark to determine how effective the demonstrations were.

He next called upon each farmer to discuss the demonstration program with them. Their first step was to take a soil sample and send it to the University of Tennessee Soil Testing Laboratory in Nashville. They then used the fertilizer recommended by Joe Matthews, University of Tennessee, soil fertility specialist.

All college recommendations for tobacco, from beginning to end, were followed with special emphasis on rotation and fertilization. This called for many trips to these farms but, to determine the income potential, it was essential that the best possible management be followed.

Eight of the farmers ended up by making more profits per acre even though they had a greater per acre investment. This, according to Mr. Cunningham, is because farming today is a highly competitive business and to realize a profit for his labor, land and equipment, the farmer must make high yields per acre. Investments in the proper amounts of fertilizer and good seed, as well as weed, disease and insect control, are mandatory. The other demonstrator's crop was heavily infested with Black Shank which reduced the yield.

The average production for these demonstrators was 1,886 lb. of burley per acre, compared to their previous three-year average of 1,448 lb. The average production in the community remained about the same, with 1,818 lb. Mr. Cunningham maintains that these results proved that the low-yield farmer can increase his income by following college recommendations.

Root Rot Disease Discussed at Meeting

COCHRAN, GA. — Plant pathologists and forest researchers here recently told some 150 professional foresters from five states that as much as one half the growing stock in some southeastern pine forests is being lost to Fomes annosus, a disease that causes serious root rot.

The technical forum on the disease, which was sponsored by the Georgia Forest Research Council, featured discussions by Dr. John S. Boyce, Jr., plant pathologist of the Southeastern Forest Experiment Station, Asheville, N.C., and others who have been engaged in extensive study of the fungus.

BIG INCOME BOOST

MANHATTAN, KANSAS — When Kansas State University started its annual fertilizer conference back in 1947, Kansas dealers were selling 33,000 tons of fertilizer a year.

Kansas fertilizer sales for the year ending June 30, 1960, totaled 333,000 tons—a ten fold increase.

Floyd W. Smith, K-State agronomist, estimates this increased amount of fertilizer supplied 134,000 tons of plant food "and if used according to K-State recommendations should have added approximately $60 million to the gross income of Kansas farmers."

CREDIT IMPORTANT HERE—Nathan's Feed & Seed Co., Columbus, Ga., has been able to cut its delinquent account loss to nearly nothing through its working of a collection-delivery plan. Store's owner, Nathan Jones, believes in keeping his customers aware of his being in business to serve them.

Georgia Store Cuts Delinquent Account Loss to Almost Zero With Collection-Delivery Policy

Every day of the business week, a truck loaded with merchandise, mostly sack feed, fertilizer and seed, leaves the loading platform in the rear of Nathan's Feed & Seed Co., 1303 First Ave., Columbus, Ga.

Before the day is done, the truck will have traveled 30 miles out into the country surrounding Columbus, into possibly one or two counties. As the merchandise is unloaded, the driver collects for the merchandise delivered the previous week and proceeds to take orders for delivery the next.

This is a part of a system Nathan Jones, owner of the store, has followed for a number of years in developing the rural business in a city store.

It is a plan that eliminates the worry of how to handle accounts.

It has played an important part in a high percentage of collection of accounts. Mr. Jones says in the seven years he has been in Columbus (and 14 in a neighboring town, Phenix City, Ala.) he has lost only approximately $500 in bad accounts.

It is a plan that presents a personal touch — through the truck driver-salesman with the customer.

It is a plan that provides orders a week in advance.

It puts efficiency into the delivery system in the rural areas since routes are established and the customers know what day deliveries will be made. The same area is served on the same day each week. The plan has eliminated the necessity of adding delivery charges to merchandise.

Mr. Jones wants his outlying customers in nine counties to know he wants their business. To help convince them, he has followed a steady course of advertising in the weekly papers in each county served by the truck on weekly routes.

He has a great deal of faith in advertising in these small papers. He thinks they are read from front to back by the people. And it is one of the most inexpensive methods of advertising he has found.

"I'm a bit different from some farm people regarding advertising in that I realize I must keep the public always aware that I am in business," he said.

Most of the ads stress an invitation to the people living in the rural areas to make the store their headquarters while in town. One ad for example says: "When you come to Columbus, come to Nathan's."

"The cost of these ads usually runs around $15 a month for each paper and when you take into consideration

Turn to CREDIT, page 15

Double Pest Control and Get Six Times the Profit

STONEVILLE, MISS. — Although twice as much insect control was required for two-bale cotton production, the net profit per insecticide application was six times as great as for half-bale production.

These results, drawn from the South Carolina Five-Acre Cotton Improvement Contest, were presented at the Delta Council Conference here recently by Dr. H. G. Johnston of the National Cotton Council, Memphis.

Speaking on profits in cotton insect control, Dr. Johnston said an uncontrolled infestation can greatly reduce or completely nullify any potential increase that might be expected from fertilization, irrigation and other improved practices.

"On the other hand, complete insect control cannot increase yields beyond the potential provided by these practices," the entomologist said.

In the South Carolina contest, farmers producing one-half bale per acre used about minimum requirements for a balanced fertilizer and an average of four insecticide applications. The net profit, Dr. Johnston said, was $22 per acre, or an average profit of $5.50 for each insecticide application.

The two-bale group used about 50% more fertilizer and an average of seven insecticide applications. Net profit was $240 per acre, or an average of $34.30 per application.

The half-bale group produced cotton at an average cost of 31¢ per pound, the two-bale group at 15¢ per pound. This, Dr. Johnston said, points up the fact that efficient cotton production depends upon a proper balance of all improved production practices and no one of them alone will get the job done.

Dr. Johnston also cited research work in Texas and Louisiana which points up the value of insecticide treatment.

"In both locations since 1945, when organic insecticides became available, the average yield increase due to insecticide treatment has been about 50% and has ranged from 30 to 150%," he stated.

To illustrate what adequate insect control means in relation to other improved practices, Dr. Johnston said a 10% insect loss on half-bale production is only 25 lb. of lint per acre.

"But a 10% loss on two-bale production is 100 lb. of lint per acre, and thus the potential profit for more complete insect control is four times as great," he said.

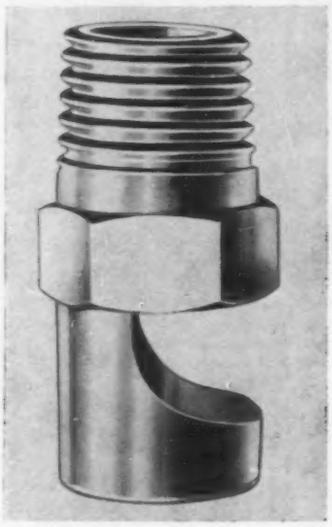
WHAT'S NEW

IN PRODUCTS · SERVICES · LITERATURE

To obtain more information about items mentioned in this department simply: (1) Clip out the entire coupon in the lower corner of this page. (2) Circle the numbers of the items of which you want more information. Fill in the name and address portions. (3) Fold the coupon double with the return address portion on the outside and fasten the edges with a staple, cellophane tape or glue. (4) Drop in the mail box.

No. 6121—Flooding Nozzle

A new nozzle called the Type F (flooding) nozzle has been added to the Delavan Manufacturing Co.'s 1961 line of sprayer equipment. The firm says the nozzle delivers a de-



flected, wide fan-type spray and is well suited in the delivery of post-emergence chemicals, defoliation chemicals and even fertilizers. It is available in brass and stainless steel. For full information check No. 6121 and mail the coupon.

No. 6120—Liquid Applicators

A selection of liquid fertilizer applicators is described and illustrated in a new brochure produced by Tryco Manufacturing Co. Information is given on pump type, air pressure type and metering pump applicators, along with recommendations for the kind of solutions each is best suited to handle. Separate sections cover spray boom and tool bar assemblies, as well as new fiber-glass tanks. Several new features of the Tryco line for 1961 are introduced. More information may be obtained by checking No. 6120 and mailing the coupon.

No. 6125—Sprayer, Duster Catalog

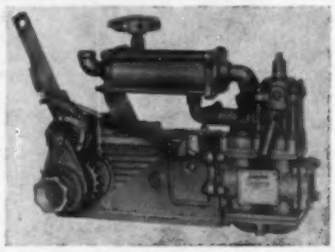
The new 1961 Hudson Sprayer and Duster Catalog is being distributed by the H. D. Hudson Manufacturing Co. The company's entire line of hand-operated and small power sprayers and dusters is shown in color. The more than 140 items are catalogued with a simple layout and brief, complete descriptions. Many full-color views of Hudson sprayers and dusters in actual use are also shown. For more information check No. 6125 and mail the coupon.

No. 6119—Fork Truck Brochure

A new six-page color brochure giving specifications of three battery powered fork trucks is being offered by the industrial truck division, Clark Equipment Co. The machines are intended primarily for low clearance operations. Drawings show turning radius and dimensions for all three models. Charts illustrate lift heights and lifting speeds. Photographs show such features as one control lever for lift and tilt, hydraulic pump and nested, roller type upright. For more information check No. 6119 and mail the coupon.

No. 6122—Metering Pump

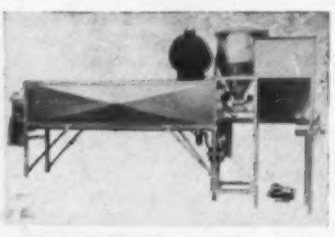
A new anhydrous ammonia metering pump has been developed by the Dempster Mill Manufacturing Co. The firm reports the pump, designed to be used on larger applicators or for intense nitrogen application, will deliver, at .245 lb. per stroke, from 0 to 280 lb. of N per acre in 200 in. swaths, even more in smaller swaths. The new pump retains the principle



of a positive drive crankshaft and eccentric running in a bath of oil, actuating a piston and diaphragm assembly. All parts coming in contact with anhydrous ammonia are of stainless steel and servicing the pump is made easy by the sectional unit construction which obviates dismantling the entire pump, the company says. Lubricating points are accessible and can be lubricated with ordinary motor oil or zerk grease. The pump features a simple stroke setting assembly by means of an accessible calibrated dial with 12 settings. Intermediate settings can be obtained by turning two compensating thumb screws. For more information check No. 6122 and mail the coupon.

No. 6124—Seed Treater

A new model seed treater has been announced by the O. W. Kromer Co. The firm says the treater will handle any sticky powdered or liquid chemical and will coat any seed completely. Features of the model, ac-



cording to the firm, include an air compressor of about twice the capacity of earlier models, a heavier variable speed drive on the seed feed auger and a newly designed chemical feed rotor on which the segments are blown clean on each revolution by compressed air which carries the chemical into the treating chamber. For more information check No. 6124 and mail the coupon.

No. 6123—Chemical Applicator

The Ezee-Flow division of AVCO Distributing Corp. has announced the availability of a new granular type of chemical applicator for herbicides and insecticides. The applicator is said to protect crop profits two ways—first, with the application of herbi-

cides that give weed zone protection and secondly, root zone protection from soil insects. This new applicator presents features that assure accurate metering and application of granular insecticides and herbicides, the firm says. These two chemicals can be applied at the same time or singly. According to the company, the applicator fits all types of planters and listers, and one pass through a field a farmer can do four operations at one time; plant, fertilize, control weeds and kill insects. Two types of hoppers are available; single hopper for application of herbicide or insecticide, and dual hopper for both herbicide and insecticide. For more details circle No. 6123 and mail the coupon.

No. 6126—Front-End Loader

A new, self-propelled hydraulic front-end loader has been announced by the Melroe Company. The new unit is designed to handle jobs in fer-

tilizer plants where areas may be too small for larger vehicles.

The new loader, the F-2, has a lift capacity of 600 lb., a break-away capacity of 1,000 lb. and a lift height of 8 ft. It is equipped with a utility scoop, and other scoops of 52-in. and 66-in. widths are also available.

Power for the hydraulic system and the two independent drive wheels is supplied by a 12.9 h.p. air-cooled, four-cycle, Onan engine with a 12-volt electric system. LP gas models are available, as well as water mufflers. Speeds up to 10 mph are possible.

Over-all dimensions are 52-in. wide, 104-in. long and 60-in. high. The unit can be maneuvered inside a boxcar to speed loading and unloading.

For further information, check No. 6126 on coupon and mail.

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OSCAR & PAT

By Al P. Nelson

The wind was cold that winter night, and a light snow slanted downward and piled up slowly on the ground. Oscar and Minnie sat in their old fashioned dining room after supper, watching a television program on their 12 inch set. The doors to all the other rooms were closed, because Oscar didn't believe in heating rooms one didn't use in winter. Why give all your money to the coal company, he reasoned. Turn the heat on in one room at a time—as you used it.

Suddenly Minnie turned to Oscar. "I think I hear someone knocking on the front door."

"Go on and answer it," Oscar commanded, for he was the boss in the house.

Minnie opened the door to the living room and closed it. She went to the reception hall, opened that door and closed it. Then she opened the front door, after turning on a low watt porch bulb.

A well dressed middle aged man stood there, a briefcase in hand. He was brushing himself, and trying to get the wet snow off his overcoat.

"Hello," he smiled. "Does — does Oscar Schoenfeld live here?"

"Yes," said Minnie timidly, for she was that kind. "What is it you want?"

"I want to see him on business," said the man. "I'm from out of town."

"Oh!" hesitated Minnie. Then, "Well, come in."

Finally, she led the man into the dimly lighted dining room where Oscar sat in an old rocker he had picked up at a rummage sale for 75¢.

"He—he wants to see you, Oscar," said Minnie fearfully.

"Mr. Schoenfeld?" smiled the salesman. "I'm glad to know you." He proffered his hand.

Oscar looked at him severely. "Why?"

"Why?" said the startled salesman, putting down his briefcase. "Well—well because you are a partner of Pat McGillicuddy in the fertilizer business, aren't you? And I've met him."

"I'm a partner," Oscar said, glancing suspiciously at the briefcase. "But he ain't such a good partner. Lots of times I want oudt!"

The salesman looked shocked. "Well, in that case, I'd better go, maybe. I wasn't going to stay too long in the morning. Pat wasn't home, and they told me you were his partner, so I came here."

Oscar leaned forward and turned off the television set. "What is it?" he said with a frown. "Are you tryink to sell us somethink?"

"Well. I have spoken to Pat. I just got a complete price on something from the factory, and I was anxious to see that you fellows got it. It's a bargain."

"We are not buyink nottink right now," Oscar said. "We are cuttink down on everythink. What is that Irisher tryink to buy now?"

The salesman looked troubled. He kept gazing at Oscar in astonishment. Then he opened his briefcase and brought out an illustrated folder which he opened with nervous fingers.

"This is an aerial photo deal of customers' fields and a plan for selling more fertilizer via soil tests and pre-ordering," he said, falling into his practiced speech, and thus getting more confidence. "Pat has probably told you all about this."

"He has toldt me nottink!" Oscar said sharply. "Ach, but I always find out in time."

Again the salesman looked indecisive. "Well, under our plan, Mr. Schoenfeld, the dealer gets aerial photos of all the farms in his area. Then he gets a copy of each photo and a cabinet in which to store them alphabetically.

"Then the farmer is mailed a card saying the dealer has an aerial photo of his farm and he is invited to see it. The dealer and the farmer number his fields which are to be fertilized the coming spring. The dealer uses a planimeter to determine the exact area of the field."

Oscar said nothing, his face immobile.

"The dealer then goes out to the farm and takes soil samples of the fields, has them analyzed and then knows exactly what analysis fertilizer each field needs. He calls in the farmer and talks things over with him. He makes out a slip in duplicate, giving the farmer information on each numbered field, and what fertilizer is needed and in what amount. The farmer takes this home. Then when he needs fertilizer he just picks up the phone and orders from this slip. This method has helped dealers in many areas give better service and sell more fertilizer."

Oscar's lips were tight. "Andt how much does this cost?"

"Oh, it's a real bargain," the salesman smiled. "We can have the aerial photos taken for you, throw in the cabinet and the planimeter—all for only $650."

"$650!" echoed Oscar. "Does that Irisher think we are mate of money?"

"Oh, this is a reasonable price," the salesman said, "when you consider that so many dealers are using it profitably as a sales idea." He drew out a sheet of paper from his briefcase. "Here is a list of fertilizer dealers in the state who recommend it."

Oscar growled deep in his chest.

Turn to **OSCAR**, page 15

FARM SERVICE DATA

EXTENSION SERVICE REPORTS

Soil scientists are taking a hard look at new uses for fertilizers to help agriculture adjust to present market demands and high production costs for some products.

Increased use of fertilizers to boost production of forest products and reduce costs of producing livestock and other "high-demand" items are examples cited by Dr. T. L. Jackson, Oregon State College agricultural experiment station soil scientist.

Ability of American farmers to produce as much—and in some cases more—food and fiber of certain types than can be marketed in this country is focusing attention on other new needs for fertilizer, Dr. Jackson said.

Red meats—beef, lamb, pork—are luxury food items in many parts of the world having a high ratio of people to farmland. Crops in those areas must go directly for human use rather than taking the less efficient method of converting these crops into red meats.

In the U.S., a key problem in maintaining a high-protein "quality diet" is to hold down costs through more efficient production of forage crops for animals, the scientist explained.

He cited the present "cost-price squeeze" of dairymen that could be eased by reducing feed costs through boosting forage crop yields with fertilizer. Also, agriculture has only scratched the surface in getting more livestock production from each acre of forage for comparatively small dollar-output in fertilizer, Dr. Jackson said.

Possibilities of increasing forest production included: fertilizing nurseries to get better survival of transplanted seedlings, fertilizing forest lands for better seed crop production and to speed growth of trees for harvesting. Application of nitrogen to "dominant" trees in a forest thicket to help them dominate the stand and reduce thinning costs also shows promise.

★

Forty-one bushels of wheat per acre on 52 acres made money in 1960 for Carlton Grubbs, a Randolph County farmer, says J. Frank McGill, agronomist of the University of Georgia Agricultural Extension Service.

Mr. Grubbs, who operates several different farms on which he grows Bledsoe wheat, states he is well pleased with the performance of this wheat. He planted his wheat Dec. 1 and fertilized it according to soil test recommendations with 500 lb. of 5-10-15 fertilizer and 66 lb. of nitrogen top dressing.

★

Fertilization has been the key to a high yield of apples in Maine, it has been reported by F. P. Eggert, head horticulturist at the Highmoor Farm Agricultural Experiment Station.

He said one of the factors contributing to high production is the fertility status of the individual trees, which has been one of the objectives of the fertilizer and nutrition work which has been carried on at Highmoor since 1941.

The horticulturist pointed out that the average yield per acre of apples in Maine is about 350 bu., but this by no means approaches the potential yield in a good orchard. In some years, he said, orchards can produce more than 1,200 bu. per acre in this state.

Reporting on the results of fertilizer treatments over a 10-year period, Mr. Eggert said they showed that the annual application of 200 lb. per tree of a good hay or straw mulch in addition to the chemical fertilizers will result in increased yields; the application of potassium and nitrogen resulted in increased yields over nitrogen only; plots receiving nitrogen applied in a ring under the drip of the branches yielded less fruit than similar plots on which the same amount of nitrogen was broadcast over the entire surface of the plot.

★

New smut-resistant varieties of wheat, new seed treatment materials, better treating equipment and methods have resulted in smut losses throughout the Pacific Northwest being reduced to "practically nothing."

Such is the report from Harry S. Fenwick, extension plant pathologist with the University of Idaho agricultural extension service, this year's chairman of the Pacific Northwest Smut Control Committee. This group, representing the states of Washington, Oregon and Idaho, gathers data and studies all angles of the smut problem with the view of holding down losses.

"Not many years ago smut losses in the three states ran around $5,000,000 a year," Mr. Fenwick reports. "In 1959 they were down to around $100,000 and for the 1960 harvest are likely to be even less."

★

University of Illinois agronomists have been studying the effects of pigweed on soybean yields. The results may surprise those who feel that a few weeds won't hurt anything.

During the first year of the study in 1959, just a single pigweed plant every five inches in the row caused a loss of almost 24 bu. of corn and 13 bu. of soybeans an acre compared with the weed-free plots.

★

Dr. James Miller of the University of Maryland Agronomy Department points out that yields of alfalfa are often reduced because adequate amounts of fertilizer and lime are not applied. Fertilizer and lime test plots with alfalfa have shown that yields are often increased on Maryland farms by 1.5 to 2 tons per acre with the use of fertilizer and lime.

To show the importance of fertilizer and lime in profitable alfalfa production, the agronomy department in cooperation with county extension offices established demonstration test plots in a number of counties. The American Potash Institute has helped support the project through a grant of funds. The fertilizer and lime were applied to the plots according to soil test results.

The response to fertilizer and lime has been very good at many of the plots. For example, yields obtained for the first two cuttings of alfalfa in a Howard County test plot in 1960 were as follows: No lime and no fertilizer—1.66 tons per acre; 500 lb. per acre of 0-15-30—2.10 tons per acre; 500 lb. per acre of 0-15-30 and 1 ton per acre of limestone—2.64 tons per acre.

★

Returns of $32 per acre from increased hay yields were obtained from the application of three tons of lime on experimental plot conducted by Dr. S. A. Barber, Purdue University agronomist, on the Purdue Southern Indiana Forage Farm.

Lime was applied at rates of 1, 2, 3, 4, 8 and 12 tons per acre. Alfalfa was grown on these plots. In the first year yield responses were obtained from rates up to three tons per acre on this soil. Returns the first year were highly profitable. Lime lasts for many years and the returns from its use will accumulate each year.

The same experiment shows that the quality of the limestone is important also. As finer limestone was used, the returns per ton increased. Limestone which has less than 25% passing a 60-mesh sieve reacts much slower than limestone that is finer.

★

Maintaining a proper balance of the major soil nutrients reduces the amount of bacterial wilt in alfalfa, according to Dr. H. J. Walters, associate plant pathologist with the University of Arkansas Agricultural Experiment Station.

In other tests, L. H. Hileman, assistant agronomist, found that alfalfa hay yields were increased by a 1:2 ratio of phosphate and potash applied in late fall or early spring.

Bacterial wilt infection was lowest when the levels of nitrogen and phosphorus were low and the level of potassium was medium or high, Dr. Walters added. He was citing results of tests conducted for three years in the greenhouse.

"Fertilizers applied in late fall or early spring were equally effective in increasing total hay yield," Mr. Hileman elaborated. "Splitting the treatment of 60 lb. of phosphorus and 120 lb. of potash per acre into half of the application in the fall and half after the first cutting gave the same yield as applying the same rate in one application in either late fall or early spring. Thus the cost of making two applications would not be justified."

Applying all the fertilizer after the first cutting did not give as high yield as applying the same rate in late fall or early spring, Mr. Hileman said.

★

Application of a small amount of molybdenum per acre increased alfalfa yields from 2,442 lb. of ovendry forage per acre to 5,256 lb. in tests made by the Georgia Experiment Station over the past three years.

The molybdenum was applied as sodium molybdate at the rate of 8 oz. per acre. The most outstanding effects of the molybdenum treatment occurred on test plots with "low" lime treatments of 500 lb. per acre. On these plots the alfalfa yield went up by 2,814 lb. per acre.

On "high" lime-treated plots of 4,000 lb. per acre, the addition of sodium molybdate increased yields by an average of 1,729 lb. of ovendry forage per acre.

★

Strip tillage is a new wrinkle in land preparation that can help farmers save from $3 to $6 in fitting their seedbeds and produce as good or better yields than conventional tillage methods.

"This shortcut involves working a narrow strip of soil 5 to 7 inches deep for a desirable seedbed for normal seed germination and emergence without overworking the rootbed between the corn rows," says Dr. Gordon J. Ryder, Ohio State University extension agronomist.

"It is accomplished by mounting a 3-wheel rotary hoe attachment just ahead of the planter shoe. The area between the strips is left undisturbed."

Dr. Ryder says this new development in minimum tillage provides a better seedbed and more space for roots, so the corn plants can use fertilizer more efficiently.

He reports that with strip processing, corn stands equal in population with conventionally-tilled fields have been obtained in Ohio in recent years under a variety of soil conditions. Strip-processed plots outyielded conventionally prepared fields by 7 bu. per acre in 1960 tests, Dr. Ryder says.

"The thinking behind strip processing is that corn generally needs a good seedbed for only 7 to 10 days," he says. "This seedbed should consist of fine soil particles and a good seed-soil contact for rapid germination and emergence.

"Then for three to four months after seedling emergence, the crop needs a rootbed that is not compacted, so that water intake and ample aeration are insured throughout the entire growing season."

DDT DIET

SACRAMENTO—Man can take up to 200 times the normal amount of DDT with no apparent ill effects, William F. Durham, a U.S. Public Health Service official, told the Governor's Committee on Agricultural Chemicals recently.

He reported that 10 men took DDT in amounts 200 times the estimated daily human intake for 21 months and that none of the volunteers complained of any symptom or showed any sign of illness that did not have an easily recognized cause clearly unrelated to exposure to DDT.

Mr. Durham added that the health service believes approved pesticides can be used with safety if recommended precautions are followed.

TRANSPORTATION INFORMATION—A group of Japanese transportation executives, on tour of the United States, visited recently with officials of International Minerals & Chemical Corp. in Skokie, Ill., to learn latest American methods in efficient freight transportation. The visit was arranged by the International Cooperation Administration. IMC executives at far end of table are (from left) T. M. Ware, president; Eugene Landis, director of transporta-

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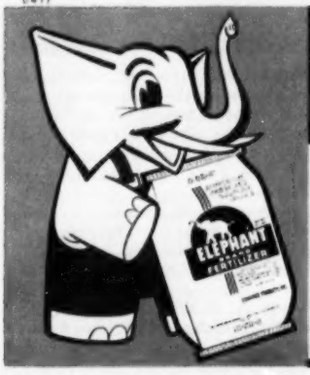

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Importance of Profit Stressed At Rutgers Fertilizer Session

NEW BRUNSWICK, N.J.—"Don't pinch the merchandise," pleads the sign on the fruit stand. But there is a constant squeeze on the fruits of industrial production, said a speaker at Rutgers University's annual fertilizer-lime conference held here recently.

Walter A. Jones, Jr., assistant manager of the Coal Chemical Sales Division, U.S. Steel Corp., Pittsburgh, reminded his audience that industrial tools have been the instruments of progress. Today machines provide 99% of the productive effort, and man only 1%.

"America's ability to compete successfully with other nations depends upon its capacity to acquire and pay for new, more efficient tools," Mr. Jones said.

"Most people think that corporate profit is cash left over after all necessary payments of a business have been made. The truth is that profit is what is left over after all the necessary payments except one have been made. That payment is for the use of existing tools and for the addition of new ones."

Mr. Jones cited the consequences of lower profits: Fewer or poorer tools, less efficiency, high production costs, higher prices, shrinking markets and fewer jobs. In the steel industry, he said, only about 7¢ out of each sales dollar goes into profits.

"Profit is not large enough," the speaker asserted, "when it fails to attract capital necessary to expand production or create new jobs, products or sales; when it fails to provide a dividend adequate to pay shareowners a competitive return."

Finally, profit is not large enough when it "fails to cover inflated costs of replacing existing facilities under present unrealistic depreciation laws," Mr. Jones said.

Some of the other speakers sized up current situations or attempted to peer ahead. Among the latter was Francis R. Raymaley of Alloway, American Cyanamid Co., New York.

Bigness and change certainly lie in New Jersey's future, he said, noting the already impressive growth of the Seabrook Farms and Campbell Soup Co.

Mr. Raymaley, citing predictions for the size of the population in 1975, said there is still the need to "get down to the basic facts of good marketing" and to take account of changing consumer habits.

Dr. Ordway Starnes, associate director of Rutgers' Experiment Station, held that the future of the College of Agriculture, with its affiliated Experiment Station and Extension Service, is interwoven with the future of the state.

In a rapidly urbanizing New Jersey the college faces adjustments to effectively serve the agri-business end of the economy to help turn out a product with greater volume and value than ever before. At the same time, the urban community looks to the college to resolve its problems.

The task of solving problems of consumers can appropriately be undertaken by the college and the extension service, Dr. Starnes stated. Common problems, he said, are those related to household economics, household pests, lawns, horticulture specialties and others. Also growing in importance are problems of conservation and environmental sanitation—altogether making the concept of the experiment station and extension service as valid as when they were founded.

What happens when a once-rural county becomes urban? For one thing, fertilizer sales become about four times as great, said Norman J. Smith, associate agricultural agent in Nassau County, N.Y.—called the "fastest growing" county in the United States.

Mr. Smith had no definite tonnage figures to offer, but estimated sales of around 5,000 tons in Nassau this year—possibly four times the volume of 1950 when most of the customers were potato and vegetable growers.

Most important crops now, according to the Nassau agent, are babies and turf grass. About 60,000 acres of grass, about a third of the area of the county, are worth $250 million.

This is a crop, he said, that's sold on the "social market" because a lawn becomes a status symbol. He called lawn owners intelligent, but possessing "primitive agricultural minds."

The biggest need of these new "farmers", according to Mr. Smith, is improved spreading equipment that can be more exactly calibrated. They need also a free-flowing and non-burning mixture with a color added "so they can tell where they've been."

He said he thought lime is so cheap that the average home owner doesn't realize how much good it can do. "Maybe you should sell it like fertilizer."

Nassau County home owners are keeping six agents on the hop in the Extension Service office answering their questions and solving problems. Back in 1950 two agents worked with the farmers and nurserymen. Of the 232 farms remaining, 180 raise nursery and greenhouse crops. The remaining farmers raise sweet corn and potatoes.

Related to Mr. Smith's topic was a searching look at present and future urban markets by Dr. Del Kolterman of the DuPont Co., Wilmington, Del. Surveys have shown, he said, that only 55% of home owners use any fertilizer at all.

The role of the dealer in this market was emphasized by Dr. Kolterman's figure showing that 66% of home owners look to the fertilizer retailer for advice.

As for the future, he saw a trend toward more interest in outside beauty, better grasses and maintenance, with a consequent need for more exacting nutrition and simplified application.

He proposed proper fertilizer formulations to meet the requirements of the home owner, furnishing him with appropriate instructions, stepped-up educational advertising to bring in the nearly half who use no fertilizer, and point of sale promotion.

Dr. Ralph Engel, turf researcher at Rutgers, took issue with Mr. Smith's point that grass is a status symbol. He said he likes to think turf gives enjoyment, healthful exercise and other benefits.

It may surprise some to learn that

AT RUTGERS CONFERENCE—Story by Francis R. Raymaley, American Cyanamid Co., far right, gets a reaction from others on the program at the Rutgers fertilizer-lime conference. Shown left to right in top photo are Merle V. Adams of Somerville, district representative of the National Plant Food Institute; L. Graham Campbell, Bennett-Clayton Co., Cranbury, retiring president of the Plant Food Educational Society of New Jersey, and Dr. Ordway Starnes, associate director of Rutgers' Experiment Station.

Dr. Del Kolterman of E. I. du Pont de Nemours makes a point, center photo, using one of his charts showing fertilizer sales potential. His audience included M. L. Somerville of Goulard & Olena, Skillman, N.J., left, and Norman J. Smith, associate agricultural agent, Nassau County, N.Y., who spoke on the impact of urbanization.

Cider break at the conference finds Robert A. Koller, far left, lower photo, of the Union County, N.J. Park Commission getting a refill from Peter A. Barich of the state chemist's staff at Rutgers, while Dr. Ralph E. Engel, Rutgers turf researcher, is served by the new president of the New Jersey Plant Food Educational Society, James W. Carroll, Cranbury.

many questions on proper fertilization of turf remain unanswered, Dr. Engel said. More research is needed in his opinion on the relation between fertilizers and grass species, water supply, weather extremes, diseases, weeds, height of cut, purpose of the turf, soil texture, soil tests for phosphorus and potash, and the nitrogen-supplying potential of the soil.

In a review of the research program of the National Plant Food Institute, Merle Adams, district representative, mentioned forest fertilization as an example of one project designed to increase fertilizer use. Little fertilizer has ever been used on trees, which occupy 435 million acres in this country.

Other projects have to do with the economic benefits of fertilizer use and the response of different crops to fertilizer.

Murray C. McJunkin of the U.S. Steel Corp. put in a plea for better communications between college and industry. Mr. McJunkin, assistant industry manager in the agriculture market development division, charged that some industry people don't take time to get acquainted wth college researchers and some may even be intolerant of basic research.

He asked for simplified bulletins from colleges, and took a shot at one bulletin that had all kinds of agronomic information, "but it took a Philadelphia lawyer to figure it out." The problem was solved by putting the information in a chart.

Both sides have fallen down in keeping the other informed about meeting dates far enough in advance, according to Mr. McJunkin, and some meetings called by the colleges have failed to attract the farmers who could benefit from the programs.

He said he thought the new Plant Food Educational Society in New Jersey can go a long way toward smoothing out some of these details.

Thomas M. Cowling, area credit manager for the Cooperative Grange League Federation, offered suggestions for handling credit. Although sales volume is increasing, the amount of credit being extended is increasing even faster, and there does not seem to be any indication that this trend will stop, he said.

He proposed better investigation of credit risks, better analysis of investigation, more realism in credit terms, better follow-up, closer work with institutional lenders and more attention to the cost of credit with proper allocation of that cost.

Such moves will provide protection and insure the operation of a business on a sound profitable basis, Mr. Cowling said. Then there will be no need to fear credit as a blight, but it can be viewed as a blessing in the form of a valuable tool for building stable profitable volume.

In a review of research needs, Dr. Russell B. Alderfer, chairman of the Department of Soils at Rutgers, called attention to the need for an inventory of land resources as a base for zoning or planning a township or county. Knowledge of the properties of soils in New Jersey will be of considerable importance in determining the best use of land.

Also, he added, there is a need to learn how to reclaim or manage the many acres of presently unproductive land in the state.

Dr. M. A. Sprague listed some specific fertilizer research needs: Corn—effect on rooting habits, pollen shedding, seed quality, disease resistance, yield potential; soybeans—nitrogen in relation to seedling development and disease resistance; small grains—growth patterns as influenced by new stiff-strawed varieties; forages—ratio for each species consistent with needs.

Another speaker who called for development of equipment to adequately spread fertilizers was Wallace A. Mitcheltree, extension soils specialist at Rutgers. With better equipment, low rates of high analysis fertilizers could be used and grades could then go as high as fertilizer companies want to go, he said.

CREDIT

Continued from page 9

how thoroughly these little weeklies are read, you can't beat a price like that," Mr. Jones said, pointing out that his ad usually runs in about nine of these papers.

One of the most effective ads Mr. Jones says he has run in the weekly papers featured fertilizing fish ponds.

"We got orders for fertilizer from that ad for several weeks after it ran," he said.

Not only does Mr. Jones advertise in the weeklies, but he also is a consistent user of space in the Columbus paper which has a wide circulation in the country where the truck makes a weekly delivery route.

During the seasons he runs a weekly ad measuring about 12 inches, featuring products in demand that time of the year, but during the off-seasons he likes to keep his name in front of the public by using a small "spot ad" which is pulled out when a larger one is used.

"You just can't beat the public contacts and by urging the people in the country to pay us a visit when in town we can make that contact, along with the associations the truck man has with the customers," Mr. Jones said.

A high type man is used on the truck because he is the salesman for the store, making suggestions and taking orders for delivery the next trip around, a week later. He must be a sort of credit manager, too.

Since he collects for the past week's deliveries when another order is delivered, he must be adept at handling accounts.

Unless prior arrangements are made at the store, each customer on the route is expected to pay the driver at the time of delivery.

When a new customer is taken on, this credit plan is outlined to him A lot of the customers have a few dairy cows and sell milk wholesale. The dairies pay them at a certain time, hence the necessity of having a satisfactory credit understanding with the feed customers.

"It's really a case of letting the customers know from the very beginning what the credit terms are and what is expected of them," Mr. Jones said. "I once knew a banker, and on a fishing trip one time, he told me to watch out for those intent upon beating me. The banker said no matter how you tie them down with legal papers they will find a way to beat you. I remembered that. It's been good advice to follow in watching out for those people who are intent upon beating you.

"Most of our customers know when they are going to be paid. They know that I know, too. When they get their checks they know I want my money for the merchandise they've bought on credit. They also know that I mean just what I say.

"Too many people in this business are too easy on credit accounts. If an account isn't paid on time, it's referred to attorneys for collecting. There just isn't a large enough margin of profit in this business to lose money on bad accounts."

The Columbus store is located next to a chain supermarket and they share the parking lot. Mr. Jones also has another lot in the rear of his store.

On the side of the store he has a large sign calling attention to garden supplies, fertilizer and allied products.

"We're friends with the supermarket and we're not fighting each other," Mr. Jones said. "Both of us are out for business and we know it. I just want the people who use the parking lot to know that they can come into our store for everything they need for the garden and farm."

To encourage the people who live in the country to make the store their headquarters Mr. Jones is constantly telling them to come and make use of the lots.

"We tell them to drive on in, park their cars and go about their business in town and when they are ready to leave, come by to see us before they head home," Mr. Jones said.

FERTILIZER MAKES NUT YIELD HULL LOT BIGGER

BERRYVILLE, ARK.—M. S. Davis of the Moore community, Carroll County, says an expenditure of only 40¢ for fertilizer around a black walnut tree yielded $8.37 in return.

He explained that last fall two walnut trees in the Davis pasture produced eight sacks of nuts in the hull. The walnuts were very small.

This fall one tree receiving 10 lb. 10-10-10 fertilizer produced 250.5 lb. walnuts in the hull. The other receiving no fertilizer produced 70 lb. of walnuts that were at least one-third smaller. The walnuts from the fertilized tree sold for $1 a hundred more than the non-fertilized tree nuts.

The grass-legume pasture soil test adjusted by County Agent Oliver L. Adams indicated what fertilizer to use. The fertilizer was placed eight inches beneath the sod in holes under the outer yard spread of the tree branches in late October.

OSCAR

Continued from page 11

"Oudt with it!" he shouted. "We won't buy it. Why do you fellows come oudt all the time with machines to sell more business? Invent a machine that will collect delinquent accounts, and we got plenty of them. Then—ach, then you will have something!"

"B—but I don't think there could be a machine like that," the salesman said perplexedly. "You see—there—"

"Oudt!" Oscar shouted. "I don't want to buy nottink!"

Dazedly the salesman headed for the front door. He seemed absolutely shocked by his treatment. The porch light was so dim he didn't see the first step and his foot slipped. He skidded downward and tore a rip in the knee of his pants.

He managed to get up and retrieve his snow covered briefcase. Then he walked toward his parked car, muttering, "There must be an easier way to earn a living than this! There must be!"

CROP ROBBER

CHICAGO—If a farmer has 50 foxtail plants in a foot of row, he can lose 25% of his corn or 28% of his soybean yield, according to Ellery Knake, University of Illinois field crops specialist.

Soil Test Program Helps Texas Dealer Increase Fertilizer Sales

In Central Texas where farming is on the downgrade, a store selling 2,100 tons of mixed fertilizer and eight cars of ammonium nitrate annually is almost phenomenal. Yet this was accomplished by the Brazos County Producers Assn. at Bryan, Texas.

"Our sales doubled in just one year," said Arthur J. Yeager, store manager, and for two reasons. First, we put on a soil sampling service, with the samples being analyzed at Texas A&M College. But a soil sample does little good unless you follow it up with a sales talk.

"Now when a sample comes back, I get the farmer in my office or maybe out at the farm and we go over the analysis item by item. I never mention the cost of fertilizer, but try to show him how he can make a profit by following the laboratory's recommendations."

Only a few farmers are now using as much fertilizer as needed, but the increase is now rapidly mounting. Mr. Yeager found that many farmers talked about fertilizer but never used any. They also promised to take soil samples of their fields but never got around to doing it.

"Finally we decided the only way to get those samples was to take them ourselves," said the manager. "Maybe the trip and time lost amount to five or six dollars, but if we can sell an extra six to eight tons of fertilizer, both the customer and store will profit by it."

Following the soil analysis, which the farmer pays for, Mr. Yeager explains why fertilizer is needed. He stresses the fact that soils have become depleted of plant food, that the owner can expect declining yields unless plant nutrients are put back into the soil. Then he cites examples to show how some customer with similar soil and crops has doubled yields by a proper fertilizer program.

The store had been selling fertilizer for 15 years without much increase in business. Finally the manager decided to push fertilizer usage, and all the employees were drilled in how it should be used and sold. As a result of the educational program, the store soon became the leading seller of fertilizer in the area.

This firm does not rent or loan spreaders and charges $2 per hundred for making delivery. There are no give-away programs or special gimmicks. Instead Mr. Yeager became convinced that the farm income could be raised by good fertilization practices, and decided that was the platform upon which to base future sales.

"A lot of dealers can't sell fertilizer because they are not sold on it themselves," he pointed out. "We not only recommend it, but we go out and show the farmer how to set his spreader, when to apply it and then we keep records on what it accomplishes. In this way the next year's program can be planned with greater accuracy."

INSECT INVESTIGATION

BERKELEY, CAL.—An investigation that could contribute to the worldwide campaign against malarial Anopheles mosquitoes and many other insect scourges of mankind has been launched by University of California scientists.

The study is being conducted by William M. Hoskins, professor of entomology, and Roderick Craig, professor of insect physiology, under a grant of $22,531 from the United States Public Health Service.

Through experiments with mosquitoes and houseflies, the Berkeley researchers are seeking to develop methods of detecting and measuring tough sub-groups of numerous insect species which have exhibited resistance to some insecticides.

Drs. Hoskins and Craig believe that the resistance of hardy sub-groups probably stems from the presence in their bodies of enzymes which detoxify the insecticides. Such enzymes could be transmitted according to genetic rules and soon give rise to larger numbers of resistant insects, the scientists said.

FLORIDA LIME NEEDS

GAINESVILLE, FLA.—Liming is recommended for about 50% of Florida's agricultural soils tested, according to soils specialists with the University of Florida College of Agriculture. With the exception of soils influenced by naturally occurring limestone, scientists say virtually all Florida soils are acid in reaction and liming materials must be applied to insure optimum soil conditions for maximum crop production.

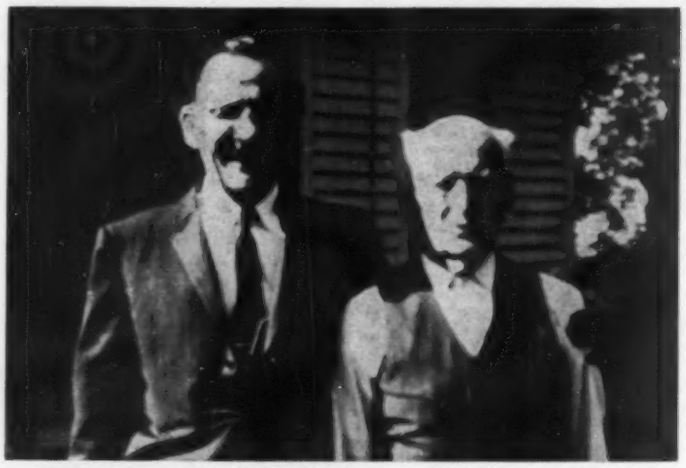
USE PESTICIDES PROPERLY

Follow Label Directions

FOLLOW INSTRUCTIONS—A plea to "Use Pesticides Properly" and to "Follow Label Directions" is made on small stickers being offered by Olin Mathieson Chemical Corp., Baltimore, Md., in connection with the industry's efforts to keep users aware of proper use of its products. The stickers, neatly printed in red letters on yellow paper, are available from OM's office, Baltimore 3, Md., or from any of its branch offices. G. D. Baerman, manager of the firm's insecticides department, says the stickers are useful to put on letterheads and billings directed to people in the trade.

RETIRED EXECUTIVE DIES

BUENA VISTA, VA.—Max Earl Souder, 71, retired chemical company executive, died here Dec. 13. He was the retired manager of Armour Agricultural & Chemical Corp. in New Jersey. He was associated with the firm for 22 years.



FERTILIZER CENTENARIAN—John L. May, right, who recently celebrated his 100th birthday, has been a fertilizer salesman for 50 years. Still active and interested in agricultural developments, Mr. May is seen here with Ray W. Hunt, manager of the Smith-Douglass plant at Columbus, Ohio. Mr. May has been handling the products of S-D and its predecessor, for the past five decades.

Ohio Centenarian Looks Back on 50 Years As Fertilizer Dealer . . . Sees Many Changes

RINGGOLD, OHIO—Scientists making a study of the influence of fertilizer on human longevity, might find a worthy subject in John L. May, pioneer fertilizer dealer of central Ohio, who recently observed his 100th birthday. He has been a fertilizer dealer for more than a half-century, and has handled the SACCO (now Smith-Douglass) brand all that time.

His span of years covers many significant developments in soil fertilization and Mr. May has always been an interested observer of such advancements. His entire background is agricultural, having been born on a Pickaway County farmstead in 1860, one of six sons of George May. One of John May's brothers, L. O. May, is still living.

John May has been interested in agriculture and farmed all of his life. He was one of the first farmers to use starter fertilizer on corn. His son, Walter May, says they had a fertilizer attachment on a corn planter as early as 1915. Some of the analyses used at this time for starter fertilizer were ½-11-1. Walter says they measured their yield by the number of bushels from the shock and that three bushels would equal approximately 45 to 50 bu. an acre. This was a top yield at that time.

In contrast, during the past season, the May farms used 12-12-12, 5-20-20 and other high analysis fertilizer grades for starter. This year's corn crop is averaging 90 bu. an acre of dry corn, including picker loss.

In addition to changes in chemical analysis, Mr. May reminds the "younger folk" that his first SACCO fertilizer came in 200-pound bags. The fertilizer was shipped from Columbus to Ashville in carload lots. Farmers came from a wide area to pick it up by horse and wagon.

In addition to his activities as a Smith-Douglass dealer, Mr. May has an outstanding record of service to his community. He has been a member of the Ohio state legislature, serving two complete terms. He has served on the Walnut Township school board, is a member of the Circleville Methodist Church, Elks Lodge and an active Farm Bureau member.

Mr. May resides on his farm near Ringgold. His recent 100th birthday was celebrated with his family and friends. He has three living sons—Walton at home; Alva at Ashville, and Ralph at Circleville. One son, Virgil, died during 1960.

Move Gives Georgia Store More Space

TIFTON, GA.—Pat's Seed & Feed, owned and operated by Pat Walls, has moved from 203 Tift Ave. to 415 West Seventh St. in Tifton, and in moving has almost doubled space for operations.

The retail store carries seed, feed and insecticides. It is retaining the same stock of small packages of garden insecticides, garden fertilizers, and other garden products, which are displayed on four tiers of shelving 12 feet long. The stock of crop insecticides has been increased.

The new outlet, which has been renovated inside and outside, consists of two store units, each 20 by 40 ft., and an office 20 by 25 ft. The location is on U.S. Highway 82, but is within the city limits of Tifton. Mr. Walls has stocked Wayne Feeds, manufactured by Allied Mills, Inc.

The owner opened the store at the Tift Ave. location in 1959, and he moved to gain space for an additional amount of merchandise, particularly an increased stock of insecticides for farm crops. The new location also provides ample parking space, which is an advantage over the old site.

Experimental Grazing Program Under Way In South Carolina

CLEMSON, S.C.—South Carolina livestock farmers may soon be reaping benefits from a stepped-up experimental grazing program now underway by Clemson College.

Some 100 acres of land at the Edisto Branch Experiment Station, Blackville, have been divided into grazing paddocks, 1-2 acres in size, and planted with Coastal Bermuda, common Bermuda, and Pensacola Bahia grasses.

The objective of the investigations, which are now in their third year, is to determine the relative merits of Coastal and common Bermuda and Bahia grasses in producing weight increases in beef cattle.

The paddocks were fertilized with nitrogen at a level of 100-200 or 400 lb. per acre and 2-5 head of steers grazed each paddock for a 6-month period. A total of 175-200 head of cattle have been used each year in the experiments.

According to R. F. Suman and S. G. Woods, leaders in the research, significant results have been obtained from the tests. Optimum returns were obtained with the Coastal Bermuda grass fertilized with nitrogen at the 200-lb. per acre level.

Additional testing was conducted with Coastal Bermuda grass with a system of rotational grazing. A good stand of grass was maintained in each paddock and fertilization and pasture mowing were carried out on a definite schedule.

Detailed information concerning the grazing tests is now being tabulated and will be announced early in 1961. The experimental work is being jointly conducted by members of the Agronomy and Animal Husbandry Departments of Clemson College.

Seedsmen Elect

DENVER, COLO.—The Colorado Seedsmen's Assn., at its recent 39th annual convention here, named Joseph Yoder of the Yoder & Caterline Seed Co., Rocky Ford, president, succeeding V. L. Sackett of Cheyenne Wells.

Others elected were Earl Auten of the Bartelds Seed Co., Denver, vice president; Carl Elmblade of the Greeley Seed Co., Greeley, secretary, and Ted Young of the Northrup, King Seed Co., Denver, treasurer.

INDUSTRY PERSONNEL NEWS

IMC Advances Two

SKOKIE, ILL.—International Minerals & Chemical Corp. has announced two promotions in the materials department of the agricultural chemicals division.


Gerd W. Kraemer

Gerd W. Kraemer, regional sales manager in Minneapolis, Minn., has been named to a new post, assistant sales manager of the materials department. He will move to IMC's Skokie, Ill., headquarters and report to E. C. Horne, sales manager.

Alexander McBride, district sales manager in Kansas City, has been promoted to regional sales manager in Minneapolis. The region includes Minnesota, Wisconsin, Iowa, Upper Michigan, Missouri, Kansas, Nebraska, Eastern Colorado, North and South Dakota.

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Wilbur-Ellis Appointment

CHULA VISTA, CAL.—David R. Kittredge, a soil science graduate from the California State Polytechnic College, San Luis Obispo, Cal., has completed six months on the job training and has been appointed as an agricultural chemical sales representative for the Wilbur-Ellis Co. in the southern San Diego County area. He will be servicing local vegetable growers in South San Diego County and Chula Vista.

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Named Sales Manager

ST. PAUL, MINN.—John F. Mulvehill, for the past five years fertilizer materials specialist for Minnesota Farm Bureau Service Co., St. Paul, has been promoted to sales manager of the company's fertilizer division, according to an announcement by O. J. Arlien, general sales manager.

The Minnesota Farm Bureau Service Co. has fertilizer plants in Moorhead, Dodge Center, Fairmont, Benson and Clarkfield, Minn.

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Named Traffic Manager

ST. LOUIS, MO.—Andrew J. Mulhern has been named to succeed Erik A. Johnson as general traffic manager for the Bemis Bro. Bag Co., it was announced by H. Howes, director of sales.


Andrew J. Mulhern

Mr. Mulhern, who has served as assistant general traffic manager for the past nine years, joined Bemis as a freight rate clerk in 1926 at the company's general traffic department located in Chicago. In 1937, he was made an assistant to the general traffic manager.

Prior to joining Bemis, Mr. Mulhern worked in various freight-clerical positions with the Chicago Great Western, Baltimore and Ohio, and Illinois Central railroads.

Joins Sulphur Institute

WASHINGTON—Dr. E. W. Bolle-Jones has been appointed to the European staff of The Sulphur Institute as assistant to the vice president. The appointment was announced by Dr. Russell Coleman, Institute president.


E. W. Bolle-Jones

Mr. Bolle-Jones, who presently is with the Agricultural Marketing Division of Shell International Chemical Co., will assist Dr. Rene Leclercq, Institute vice president, in the development of an expanded research program in Europe dealing with the uses of sulphur and sulphur products. He was to join the Institute on Jan. 2, 1961, and will be located in its London office.

Mr. Bolle-Jones obtained his B.Sc. degree in chemistry and botany from the University College of Wales in 1944. Post graduate studies were conducted at the University of Bristol where he received a M.Sc. degree in 1947 and Ph.D. degree in 1952.

From 1952 to 1957 he was with the Rubber Research Institute of Malaya, part of the time as head of the Soils Division. He joined the Shell International Chemical Co. in 1958. As a member of the Agricultural Marketing Division, he has been studying trends in fertilizer usage, needs of underdeveloped areas and the development of new types of fertilizer materials. He also has served in Shell's Development Section where he was concerned with the development of new insecticides.

Marketing Specialist

NEW YORK—John R. Hulten has been named manager-specialty chemicals marketing for Union Carbide Chemicals Co., division of Union Carbide Corp. He is responsible for marketing of fluorocarbons to the agricultural chemicals and other industries.


John R. Hulten

Mr. Hulten joined Carbide's fellowship at the Mellon Institute of Industrial Research in 1941. He has been with the firm ever since, except for three years spent in the U.S. Navy.

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Named Chief Officer Of Texas Gulf Sulphur

NEW YORK—Claude O. Stephens, president of Texas Gulf Sulphur Company, has been named chief executive officer, succeeding in the latter capacity Fred M. Nelson, whose retirement as chairman was announced in December.


Claude O. Stephens

Mr. Stephens has been president since March, 1957. He has spent his entire career with Texas Gulf, having joined the company in 1932 upon graduating from Louisiana State University. After service as a field engineer and later as manager of the company's Wyoming operations, he

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PATENTS and TRADEMARKS

2,964,394

Ammoniation of Superphosphates. Patent issued Dec. 13, 1960, to John H. Haslam, Landenberg, Pa., assignor to E. I. duPont de Nemours & Co., Inc., Wilmington, Del. A process for ammoniation of superphosphate which comprises contacting superphosphate with from about 1% to 6% by weight of ammonia, and an ingredient from the class consisting of alkali metal hydroxyacetates and ammonium hydroxyacetate, said ingredient being present in an amount by weight of from 0.05 to 3 times the weight of the ammonia.

2,964,395

Method of Improvement of Calcium Cyanamide. Patent issued Dec. 13, 1960, to Albert R. Frank, New York, assignor to American Cyanamid Co., New York. In hydrating crude calcium cyanamide to obtain a hydrated non-swelling, storage-stable calcium cyanamide product, the improvement which comprises: at ambient temperature forming a substantially uniform admixture of a known weight of said crude cyanamide and a sufficient amount of peat moss of known moisture content to provide, as moisture content of the peat moss, water in an amount of from about 6% to about 9% by weight of said cyanamide, whereby an exothermic reaction is initiated and the temperature of the mixture rises; removing heat from said mixture at a rate such that no portion of said mixture is heated to a temperature above about 100° C., continuing the removal of heat until self-heating substantially ceases and said mixture is cooled to about said ambient temperature, whereby hydration is accomplished with a minimized loss of total and a minimized conversion of cyanamide nitrogen to other forms of nitrogen and a storage-stable calcium cyanamide product is obtained having a total nitrogen content of from about 18.5% to about 23% and a cyanamide nitrogen content of from about 18% to about 22.5%.

2,964,452

Ammonia Storage and Recovery System. Patent issued Dec. 13, 1960, to William G. Morrison and Byron T. Brown, Phillips, Tex., assignors to Phillips Petroleum Co. The method of recovering anhydrous ammonia from a stream containing 10-45 weight percent ammonia, 15-30 weight percent salt comprising sodium chloride and the balance water which comprises adding sufficient ammonia and water to said stream to provide a feed containing 60-85 weight percent ammonia, 2 to 15 weight percent salt and sufficient water to provide a salt-water solution on an ammonia-free basis which is 80-95% saturated, introducing said feed into a fractionation zone, supplying heat to the bottom of said fractionation zone and withdrawing heat from the top thereof to separate an overhead product of anhydrous ammonia and a salt-water bottoms product, whereby the fractionation zone is operated on a continuous basis without foaming or flooding.

2,950,171

Process and Apparatus for the Manufacture of Phosphoric Acid. Patent issued Aug. 23, 1960, to André Macq, Brussels, Belgium, assignor to Union Chimique Belge, Societe Anonyme, Brussels, Belgium, a Belgian company, and Manufacture des Glaces et Produits Chimiques de Saint-Gobain, Chauny et Cirey, Société Anonyme, Paris, France, a French company, jointly.

A process for the continuous manufacture of phosphoric acid from natural phosphate and sulfuric acid which comprises the steps of establishing a single horizontally-elongated reaction zone, establishing a reaction medium in said reaction zone comprising the reaction product of sulfuric acid upon natural phosphate, establishing adjacent one end of said horizontally-elongated reaction zone containing said reaction medium a vertically-moving toroidal current in said reaction medium around a vertical axis, the inner portion of said toroidal current being caused to move downwardly while undergoing converging-diverging confinement and the outer portion of said toroidal current being caused to move upwardly in the other direction around said inner confined portion, simultaneously establishing in a second portion of reaction zone which is spaced laterally with respect to said toroidal current a plurality of vertically superposed horizonal currents and causing said currents to move at least partially in closed paths, said superposed currents comprising upper horizontal currents and lower horizontal currents, causing a first portion of the upwardly flowing outer portion of said toroidal current to commingle with some of said horizontal currents, causing the remaining horizontal currents to commingle with the remainder of the vertically moving outer portion of the toroidal current and causing said remaining horizontal currents to be sucked into the inner downwardly-moving portion of the toroidal current continuously introducing natural phosphate and washing water from the filtration of the slurry of previously formed product into the upper end of the inner portion of said toroidal current, continuously introducing sulfuric acid into said upper horizontal currents, and continuously withdrawing said reaction product from said reaction zone.

2,946,666

Apparatus for Ammoniation of Phosphate Materials. Patent issued July 26, 1960, to Lewis C. Eymann, Forest City, Iowa. Apparatus for ammoniating particulate phosphate material comprising an axially rotatable cylindrical mixing drum, a plurality of radially inwardly projecting flights extending lengthwise of the inner periphery of said drum, means for rotating said drum, means for supplying to said drum a charge of particulate phosphate material in such predetermined quantity as to form in said rotating drum a dense body rolling about a horizontal axis and having a maximum depth at least about twice as great as the amount of radially inward projection of said flights, and said body being substantially uniform in depth and density throughout the major portion of the length of said flights and of said drum, and a sparger having a head provided with orifice means for discharging in one direction an ammoniating liquid at a volumetric rate which at any given instant is substantially identical throughout the length of said sparger, said sparger having a second head provided with orifice means for discharging in an opposite direction an acid in liquid form at a volumetric rate which at any given instant is substantially identical throughout the length of said sparger, means for mounting said sparger in a fixed position within said drum with the discharging means thereof at least about four inches below the surface of said body of phosphate material and so directed as to discharge ammoniating liquid and acid in opposite directions generally parallel with the upper surface of said body, said sparger having a length substantially equal to and being disposed within that portion of said body which is substantially uniform in depth and density.

Industry Trade Marks

The following trade marks were published in the Official Gazette of the U.S. Patent Office in compliance with section 12 (a) of the Trademark Act of 1946. Notice of opposition under section 13 may be filed within 30 days of publication in the Gazette. (See Rules 20.1 to 20.5.) As provided by Section 31 of the act, a fee of $25 must accompany each notice of opposition.

Pesti-Fog, in capital letters, for liquid insecticides. Filed Oct. 28, 1959, by General Implement Corp., Clearwater, Fla. First use July 16, 1959.

Sabithane, in capital letters, for insecticides and other products. Filed Feb. 8, 1960, by Rohm & Haas Co., Philadelphia. First use Jan. 15, 1960.

Velva-Gro, in capital letters, for fertilizer. Filed March 4, 1960, by International Guano Co., Dallas, Texas. First use Jan. 22, 1960.

Scor, in capital letters, for insecticide spray solution. Filed March 31, 1960, by Lien Chemical Co., Franklin Park, Ill. First use April 13, 1959.

Duet, in capital letters, for combination lawn feed and weed controlling agent. Filed Nov. 20, 1959, by International Minerals & Chemical Corp., Skokie, Ill. First use Oct. 22, 1959.

Or-Min-Ite, in capital letters, for lawn and turf food. Filed Feb. 16, 1960, by Garden Products Co., Farmingdale, N.Y. First use Jan. 4, 1960.

Turf-Life, in capital letters, for lawn fertilizer. Filed Nov. 12, 1959, by L. Teweles Seed Co., Milwaukee, Wis. First use Nov. 5, 1959.

Durana, in capital letters, for nitrogen-containing solution suitable for use in the manufacture of fertilizer. Filed April 5, 1960, by Allied Chemical Corp., New York. First use Feb. 29, 1960.

Pelgro, in capital letters, for pelletized plant food for soils. Filed April 13, 1960, by Wilson & Toomer Fertilizer Co., Jacksonville, Fla. First use Sept. 10, 1959.

Russian Soil Inoculant Found Ineffective In Increasing Phosphorus Uptake in Crops

WASHINGTON—A soil inoculant developed by Russian scientists and claimed to increase the rate of phosphorus uptake of plants and to increase yields has been found ineffective after extensive research by the U.S. Department of Agriculture.

Investigations by J. Hamilton Smith, Frank E. Allison and Demetrios A. Soulides of USDA's Agricultural Research Service showed an increase in yields only once in the studies at Beltsville, Md., and no increase in phosphorus uptake. The research was reported at the recent annual meeting of the American Society of Agronomy in Chicago.

The inoculant from the USSR consists of spores of Bacillus megaterium adsorbed on kaolinite at the rate of about 7 billion spores per gram. When applied to soils, the inoculant is designed to release the phosphorus in the soil so that it can be utilized by plants.

During the first year of greenhouse experiments at the Agricultural Research Center, Beltsville, Md., in which tomatoes and wheat were grown in six neutral soils a 7.5% increase in tomato yield was obtained where the phosphobacterin had been applied. However, no increases in yield were obtained in later experiments and in no case were wheat yields increased.

To determine whether the inoculant had any effect on phosphorus uptake by the plants, the scientists applied radioactive phosphorus 32 to the soil. A check of the radioactivity of the plant showed that only a normal amount of phosphorus was being absorbed by the plant's roots. The scientists conclude from these experiments that phosphobacterin cannot be recommended for vegetable or field crops.

Phosphobacterin was first produced in the USSR in 1947 and is widely used in that country as a soil or seed inoculant. Vegetable crops have been listed as the most responsive by Soviet scientists, and grain crops and potatoes have been reported to show some response. Soviet literature also states that phosphobacterin is effective on orchardgrass, but not on cotton.

Yield increases credited to phosphobacterin have been reported by Russian scientists to range from 0 to 70% and to average about 10%. In numerous tests on collective farms in the Soviet Union, increases of 60% in yield have been reported.

However, since field experiments in the Soviet Union are seldom designed for statistical analysis, U.S. scientists find accurate evaluation difficult. Also, because many soil organisms are able to decompose soil organic matter and release phosphorus and nitrogen, the U.S. scientists question whether the addition of a few more organisms such as are present in phosphobacterin could be expected to produce significant yield increases.

Canadian Farmers Used More Herbicides in 1960

WINNIPEG — The trend towards the greater use of weed control chemicals by western Canadian farmers was particularly evident in 1960, a report from the publications and statistics branch of the Manitoba Department of Agriculture and Conservation indicated.

Over 22,000,000 acres of crops in western Canada were treated with herbicides during 1960, a jump of over 6,000,000 acres from the 1959 total. Although farmers in Saskatchewan increased their use of herbicides considerably more than in the other three western provinces, farmers in Manitoba showed a definite swing towards greater usage.

The increased use of herbicides can be explained mainly by an above normal infestation of weeds on many farms in 1960 because fall work in 1959 could not be carried out, and to an increasing awareness by farmers of the value of herbicides.

Correction

A report on the National Fertilizer Solutions Assn. meeting carried in Croplife's issue of Dec. 5 contained quotations from Walter S. Colvin, director of agricultural sales of the Nitrogen Division of Allied Chemical Corp. Mr. Colvin has told Croplife that the quotations were inaccurate. "Not only were the quotations not mine, but the views and ideas expressed do not represent my thinking on these subjects," he said in a letter to Croplife's editors.

"I was not on the convention program, did not discuss foreign competition, and did not speak with any Croplife reporters on any subject," he added.

The situation apparently stemmed from our reporters using a Memphis newspaper report of the meeting as one source of information. Croplife regrets this happening and apologizes to Mr. Colvin and to his company for any embarrassment which may have resulted from this inadvertence.

Placement of Fertilizer . . . Is It Equally Important With Amount?

EAST LANSING, MICH. — Proper placement of fertilizer is beginning to rank with proper amounts in the minds of today's farmers, according to a Michigan State University soil expert.

Dr. Lynn S. Robertson, of the MSU department of soil science, told a Michigan Seed Producers and Dealers Conference Dec. 12-13 at the MSU Kellogg Center, that many agronomists believe improper placement has been limiting fertilizer responses.

"Many times, poor crops do not result from poor seed, disease or insect damage, bad weather or any of the other factors commonly blamed for such trouble," Dr. Robertson said. "Rather, they result from improper fertilizer placement, a situation all too common on crops throughout the nation."

Many farmers today are experiencing lesser damage without being aware of the nature of the difficulty, he pointed out. This may be shown in all degrees of stand reduction, delayed emergence, variable-sized plants, delayed maturity and others.

He advised the group that to avoid injury to the seedling was one objective of good fertilizer placement. Soluble N, P or K salts in too close proximity to or with the seed may be harmful, he said. An important rule, according to Dr. Robertson, is to allow free soil between the seed and the fertilizer band.

The efficient use of fertilizer, he said, means supplying nutrients from start to maturity. Merely applying fertilizer does not insure that it will be taken up by the plant.

It is important, the professor said, to have it where it will intercept the roots of the young plant. Later in the growing period, he added, there should be an ample supply of nutrients throughout the plow layer.

Although there are many methods of placement, he continued, the choice will depend upon the fertility level of the soil, the crop and the equipment available.

Dr. Robertson advocated certain basic principles regarding fertilizer placement for farm crops, among them that most row crops respond best to fertilizer placed to the side and slightly below the seed level of young plants. The primary root of small-seeded legumes tends to go straight down, he pointed out, and a part of the fertilizer should be directly under the row as in band-seeding.

He explained that N, P and K vary in amount of movement in the soil. In general, nitrogen moves the most, phosphorus the least and potassium in between, he said.

The amount of rainfall or soil moisture influences the amount of damage from improperly placed fertilizer, he said. With a limited amount of water, the fertilizer dissolves, but the solution is very concentrated and conditions are favorable for maximum damage, he added.

The speaker also commented on fertilizer "burn," caused when large amounts of fertilizer salts dissolve in the soil solution around the germinating seed or young seedling, and the plant cannot get water. This, he stated, may be so great as to kill it—literally by drying it out—just as effectively as if it had been placed in an oven.

In discussing fertilizer band application, Dr. Robertson said the purpose of band or starter fertilizer is to provide the young seedlings with nutrients during the critical period following the exhaustion of the reserve nutrients in the seed, and prior to the development of an extensive root system. Close proximity to the root system is very important here, he added.

He also considered broadcast application before planting. Through soil tests, he said, many growers are finding their soils to be quite low in P and K. To supply adequate amounts of P and K, as well as N safely, it is often necessary to broadcast and plow down part of the fertilizer so it can be used later in the season and it is in moist soil.

Split boot is unsatisfactory in row crop fertilization, he maintained. With the present-day higher rates of higher-analysis fertilizer and fast planting speeds, the split-boot is unsatisfactory because the fertilizer tends to be drawn close to the seed. On compact seedbeds and/or with a worn boot, he added, the fertilizer may be deposited very close to or on the soil surface.

For corn crops, he said placement of the planting fertilizer in a separate band about two inches to the side and below the seed level is highly desirable. This avoids damage from soluble salts in dry years, but the feeder roots reach the nutrients soon after the seed germinates, according to Dr. Robertson.

In discussing other row crops, he said fertilizer at planting for soybeans and white beans should be in a separate band. For forage crops, he advised band seeding for small-seeded legumes and grasses. A part of the fertilizer is banded about 1½ to 2 inches deep, he explained, and the seed dropped directly over the band. Tap roots of seedlings soon reach the plant food, resulting in vigorous early growth, he said. Band seeding also improves stand and growth of alfalfa, he added.

The same principles, he stated, also apply for fertilization of small grain and grass-legume seeding. Side band control placement also improves stands and speeds up emergence.

Corrective or rotational applications were also discussed. Where large amounts of phosphate fertilizer are needed, a large part of it may be broadcast, Dr. Robertson advised. This is safe, efficient and saves the farmer a lot of work, he added.

In conclusion, Dr. Robertson stated that if really adequate quantities of potassium on soybeans are applied to previous crops in the rotation, and lime and phosphorus are applied to the entire area, residual fertility is effective. And, he warned, don't spoon-feed a sick soil—fertilize to correct soil deficiency and apply safely.

In the final analysis, said Dr. Robertson, fertilizer should be used wisely, efficiently and scientifically. "Have your soil tested, don't guess," he maintained.

CALIFORNIA SALES UP

SAN FRANCISCO — California's sales tax agency reports that taxable sales (all sales over ten cents) of farm and garden supply stores amounted to $37 million during the second quarter of 1960. The total represented a 4.1% increase over the second quarter of 1959. Farm implement dealers reported taxable sales of $52 million, 5.7% less than the previous year.

Oasis Chemical and Valley Insecticide Companies Purchased

BLYTHE, CAL.—Arical Co., wholly-owned subsidiary of Arizona Fertilizer & Chemical Co., Phoenix, on Dec. 16 completed negotiations for purchase of the physical assets of Oasis Chemical Co., Inc., and Valley Insecticide Service Co., Imperial, Cal. The latter firm is a sales organization of the insecticides, liquid foliar plant nutrients and herbicides made by Oasis. A spokesman for Arizona Fertilizer & Chemical said that it expects to incorporate the two companies. Price of the negotiations was not revealed.

The newly purchased properties do an annual business of some $600,000. Officers are Don Keyfauver, president and Max Helm, secretary-treasurer. The new owners said that no personnel changes were to be made at the present time.

Midwest Agronomists and Fertilizer Trade Conference Features Ideas for More Sales

CHICAGO, ILL.—Five major features ranging from a study of demonstrations as "door-openers" for plant food sales, the banker's function in fertilizer credit, and the impact of research on fertilizer use, will headline the 13th annual joint meeting of Midwestern agronomists and fertilizer industry representatives at the Edgewater Beach Hotel here Feb. 16-17.

Dr. M. B. Russell, head of the University of Illinois agronomy department, is chairman of the meeting, and Dr. R. L. Cook, head of Michigan State University soil science department, co-chairman.

The two-day sessions, sponsored by the National Plant Food Institute's Midwest regional office, are expected to draw an attendance in excess of 700.

The program will feature: (1) a report on the role of the extension service and its relationship to the fertilizer industry; (2) a discussion of the banker's role in credit for fertilizer; (3) a review of the Miami County, Ohio demonstration program and its effects on fertilizer use; (4) fertilizer research reports by agronomists from Iowa, Kansas, Ohio and Wisconsin; (5) analysis of a Wisconsin study on the impact of improved management practices in boosting farm income on different types of soils.

Among speakers thus far scheduled are: Dr. D. G. Aldrich, University of California, dean of agriculture, statewide; Douglas R. Graves, assistant vice president, Harris Trust & Savings Bank, Chicago; Dr. Everett Rogers, agricultural economist and Dr. Gordon Ryder, extension agronomist, Ohio State University; Dr. Marvin Beatty, extension soils specialist, University of Wisconsin.

The program will begin at 1:00 p.m., Thursday, Feb. 16, with a welcome by Paul T. Truitt, NPFI president and Zenas H. Beers, Midwest regional director.

BROME GRASS FERTILIZATION

MANHATTAN, KANSAS—Bromegrass is a "cinch crop for fertilization," according to Dr. R. A. Bohannon, Kansas State University extension agronomist. "Forage yields were increased nearly a ton and a half per acre when old stands of bromegrass received an application of fertilizer containing 100 lb. of elemental nitrogen in four-year tests at various Kansas locations," he reports.

1960 Index of Croplife Articles

EDITORS'S NOTE: *Part I of the Index of Articles appearing in the Production Edition of Croplife in 1960, was published in the issue of December 19, 1960. The remainder, herewith, completes the summary of the year.*

BEAUTIFUL JOB—Selling fertilizer from this display was deemed a pleasure by William J. McNamara (left), proprietor of Southern Gardens Center, Miami, Fla. The two beauties in sarongs became part of the display by virtue of the firm's first anniversary celebration. Harry Rogers (right), salesman from Hector Supply Co., as well as other supplier representatives, were more than willing to help stage the promotion. Results were good, too, Mr. McNamara said. Sales tripled all previous records, he said.

PERSONNEL

Continued from page 17

became manager of its gas department in 1951. He was elected a vice president the following year and became a director in 1956.

Mr. Nelson has been with Texas Gulf for 34 years and has served as chief executive officer since 1951, when he became president.

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Bemis Appoints Three

ST. LOUIS — Three appointments within the sales operation of the Bemis Bro. Bag Co. have been announced by C. W. Akin, executive vice president.

D. Woodmansee, Jr.

George W. Finlay has been named manager of the Wichita bag plant and sales division and will be succeeded as supervisor for multiwall bag sales in the company's general sales department in St. Louis by U. A. Tull. The latter's post as sales manager of the Memphis sales division will be filled by Donald H. Woodmansee, Jr.

Mr. Finlay will assume his new position Feb. 28 upon the retirement of the present plant manager, M. E. Ocker. Mr. Tull's and Mr. Woodmansee's appointments were effective Dec. 1.

Mr. Finlay, who joined Bemis in

George W. Finlay U. A. Tull

1946, two years later became office manager at the company's plant in Mobile, Ala. He served there in office production and sales positions before becoming supervisor for multiwall bag sales in St. Louis in 1957.

Mr. Finlay was graduated from St. Louis University in 1941.

Mr. Tull has been with the Memphis sales division since 1947 and was appointed sales manager there in 1952. He attended Union University in Jackson, Tenn.

Mr. Woodmansee joined Bemis as a sales representative in its Memphis sales division in 1951. He was graduated from the University of Tennessee, Knoxville.

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Gandy Appointment

OWATONNA, MINN. — Michael (Mike) G. Chavez will represent the Gandy Company, Owatonna, Minn. in its Eastern States Division, according to an announcement by Harry R. Colvin, director of field sales.

Michael G. Chavez

Mr. Chavez will headquarter at New Cumberland, Pa. and will provide direct factory representation to the farm and turf maintenance markets in the Eastern states.

The Gandy Company manufactures granular chemical applicators, fertilizer spreaders and seeders.

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Chase Promotes Two

NEW YORK — George K. Whyte has been appointed to the newly-created position of central regional sales director for Chase Bag Co. Prior to the promotion, Mr. Whyte was manager of the company's St. Louis sales division. In his new post he will be responsible for the Toledo, Cleveland, Detroit, Buffalo and Pittsburgh sales areas, and will make his headquarters in Toledo.

George K. Whyte

James G. Jackson, previously sales manager for Chase in St. Louis, succeeds Mr. Whyte as manager of the St. Louis sales division.

Mr. Whyte was graduated from the University of Illinois and has been with Chase since 1942. Mr. Jackson, a graduate of Washington University in St. Louis, joined the company in 1947.

ASSOCIATION

Continued from page 1

cals in the states of Iowa, Nebraska, Missouri, and Kansas.

Prime objectives of MACA, as determined during the organization meeting, are to procure and distribute useful information pertaining to the scientific development of agriculture, to work closely with state and federal agencies in agricultural projects and "to promote better understanding, cooperation and a high standard of ethics among all persons interested in the improvement of agriculture."

In this connection, state committees have been set up within the organization to help carry out MACA objectives within those states covered by the new organization.

The MACA recently assisted the agricultural authorities at the University of Missouri in organizing a pesticide short course which will be offered by the university Feb. 21-22, 1961.

Principal speakers at MACA's initial meeting were James E Anderson, assistant director of the Food & Drug Administration, Kansas City area, and H. F. Tomasek, president of Chemagro Corp. and vice president of the National Agricultural Chemicals Assn.

In addition to Mr. Woodbury, other MACA officers are: Douglas Nelson, Niagara Chemical Division of Food Machinery and Chemical Corp., vice president, and Harold Howard, Thompson - Hayward Chemical Co., secretary. Directors are: Robert Brown, Miller Chemical Co.; Douglas Nelson, Niagara Chemical Co.; Ray Northrop, Associated Chemical Co., and Mr. Woodbury and Mr. Howard.

The next meeting of MACA has been set for Friday, March 3, in Omaha, Neb.

Cyanamid Forms Two New Sales Regions

NEW YORK—E. H. Smythe, marketing director for the Agricultural Division of American Cyanamid Co., has announced the formation of two new sales regions. As of Jan. 1, the present midwest region was divided into the west central region and the east central region.

The west central region is now comprised of the states of Nebraska, North Dakota, South Dakota, Minnesota, Iowa and Wisconsin, with headquarters in Minneapolis. L. P. Zapalac will be the regional manager. District managers reporting to Mr. Zapalac will be John Reynolds, A. M. Brown and Mort McDonald.

States making up the new east central region are Illinois, Indiana, Michigan, Ohio and Kentucky. The east central region will headquarter in Chicago, and Dr. M. J. Harvey will be the regional manager. Assisting Dr. Harvey as district managers are T. J. Montgomery, E. E. Papizan, F. W. Overton and Don Lee.

Fertilizer Boosts Clover Yields on Range Lands

DAVIS, CAL.—The necessity for fertilizing rangeland planted to clover was demonstrated recently by two University of California scientists.

Of 14 soil samples collected from different rangelands in Lake County, four were deficient in sulfur, four low in phosphorus and six needed both sulfur and phosphorus to provide ideal growing conditions.

The tests were carried out by Willard C. Lusk, Lake County farm adviser, and Milton B. Jones, agronomist, of the University's Hopland field station in Mendocino County.

At a Hopland greenhouse, pots containing the fourteen soils were planted to sub clover. Sulfur and phosphate fertilizers were added alone and in combination to find out how the clover would grow in response to the nutrients. A control group of soils was left unfertilized for comparison.

The greenhouse tests were followed up by field tests on plots of Lake County rangelands.

Increased growth in the fertilized soils showed that California ranchers can obtain much better stands of clover by fertilizing the land at the time of planting, the researchers said.

Basic Research Grant Made to University

MINNEAPOLIS — The University of Minnesota has received a $40,500 grant to conduct a three-year study on the fundamental absorption, retention and physiological effects of herbicides and fungicides on plant cells.

Source of the grant is the U.S. Public Health Service. The study will be carried out by the university's department of plant pathology and botany.

Croplife®
A BUSINESS PAPER FOR THE FARM CHEMICAL INDUSTRY

Industry Pundits See Better Year in 1961

OPTIMISM BASED on good sound economic thinking is voiced almost unanimously by spokesmen viewing the 1961 outlook for the pesticide and fertilizer industries in this issue of Croplife. These projections, as articulated by industry observers, appear to us as being very down to earth and well within the sphere of probability. In short, prospects are for a reasonably good year, in many ways better than was the story for 1960.

Some of our commentators had especially significant observations to make on the upcoming year. One noted that farmers seem to be accepting pesticides as a necessary part of their business, rather than as an emergency measure to be used only when their crop is in danger of being destroyed by insects or plant diseases. Another indicated that the industry will emerge "sounder, stronger, and more vital than ever," as a result of its travail of the past and the necessity of improving its own marketing practices.

Changes in the marketing pattern are foreseen by practically all these spokesmen . . . changes that should streamline the industry more and, in the end, result in a better profit margin than is now being realized by either the pesticide or fertilizer trades.

Thus the outlook for 1961 is well defined. Not too bad, we would say. And we think that our readers will agree, after having looked over the thoughtful articles presented in this issue.

☆ ☆ ☆ ☆

ANOTHER phase of marketing in the 60's has been pointed out by the University of California at Berkeley. One of the university's agricultural economists says that fewer persons will be leaving U.S. farms to work in cities during the 60's. He was comparing the ten-year period of the 50's as compared to what the 60's will be.

The economist is Professor Varden Fuller, who says that he also believes that with decreased opportunity to leave agriculture, part-time farming and off-farm employment will both decrease while farm consolidations will slow down during the next ten years.

Why is this? Professor Fuller observes that the "prospective economic environment of the 1960's will be less favorable to continued large scale off-the-farm migration." He adds that the economy will have the burden of absorbing the extraordinarily large number of new labor force entries resulting from the sharp up-turn in birth rates after 1940.

"At the same time," he said, "automation and new technology will put a premium on the young persons with good high school and college training, to the disadvantage to those whose age, education, and other attributes do not make them readily adaptable to specialized job training."

Another factor to be considered in looking ahead to the next nine or ten years, is that if unemployment rates continue in the range of 5 to 6%, the large ex-farm population will exert a substantial restraining influence upon those who have not left agriculture by relaying back to them news of the uncertainty of prospects in non-farm employment.

In view of these economic prospects, the California professor questions the wisdom of current appeals for governrment programs to acce'erate the movement of low income farmers from the land.

Business people engaged in selling fertilizers and pesticides to farmers will now have the continued problem, assuming Professor Fuller's theory is correct, of educating these marginal farmers to use adequate amounts of fertilizers and to employ pesticides in adequate quantities.

K. D. Jacob on Job a Long Time . . .

Retires from USDA After 42 Years' Service

THE FERTILIZER industry is extending its best wishes at this time to Kenneth D. Jacob who retired Dec. 31 after more than 42 years of service in federal employment. "Jake" is recognized as a world authority on fertilizer chemistry and technology, and his presence at hundreds of industry meetings through the years has made him perhaps one of the best known of federal people associated with the industry.

K. D. Jacob

His work in the plant food field has brought him numerous honors, has taken him to many parts of the world, and has made his name well known through authorship of more than 175 articles and book reviews appearing in scientific journals, books, encyclopedia and government reports dealing with fertilizers and fertilizer materials.

His distinguished career began in 1918 when he entered the chemical warfare service as a control chemist at U.S. Nitrate Plant No. 1, at Muscle Shoals, Ala. The next year, he was transferred to the fixed nitrogen research laboratory in Washington, and in 1922 became associated with the fertilizer research work of USDA. He served continuously in that field since. He was head of the fertilizer investigations research branch of the division from 1947 until he became special assistant to the director in 1959.

Other activities over the years mark him as a consistently busy man. He served as abstractor for the American Chemical Society from 1922 to 1949; from 1933, as editor of the Soils and Fertilizers section of Chemical Abstracts. He also edited the American Society of Agronomy Monograph.

In the field of control officials, he served the Assn. of Official Agricultural Chemists as associate referee on phosphoric acid from 1946 to 1959; as vice president in 1954-55, and as president, 1955-56.

Through the years his counsel has been sought in many quarters, inside and outside of government circles both at home and abroad. His vast store of information and understanding of the structure of the fertilizer business from mine to farm was widely used by government agencies during World War II.

During the postwar period he went abroad on three missions for the military—to Germany in 1945 and 1948 and to Japan in 1947. He was the U.S. delegate to the FAO Latin American meeting on fertilizer production, distribution and utilization in Brazil in 1951.

In 1947 he received the USDA Superior Service Award for his researches on fertilizer resources and technology and in 1958 the Harvey W. Wiley Award of the AOAC for the development of analytical methods.

Judging from the foregoing, it would appear no exaggeration to call "Jake's" career a distinguished one, nor is it stretching a point to say that all his friends wish him well in his retirement.

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Jan. 31-Feb. 1—Agricultural Industries Forum, annual meeting, Urbana, Ill.

Feb. 8-10—Annual lime and fertilizer conference, Pennsylvania State University, University Park, Pa.

Feb. 9-10—Executive Committee meeting, Fertilizer Section, National Safety Council, Colonial Inn, St. Petersburg, Fla. Ansel I. Raney, Phillips Petroleum Co., Bartlesville, Okla., chairman.

Feb. 14-16—Eighth annual agricultural chemicals conference, Texas Technological College, Lubbock, Texas. Drs A. W. Young and Donald Ashdown, Texas Tech., program co-chairmen.

March 13-15—Western Agricultural Chemicals Assn. Spring Meeting. Disneyland Hotel, Anaheim, Cal.

Nov. 2-3—Pacific Northwest Plant Food Assn. annual convention, Hotel Gearhart, Gearhart, Oregon.

New Yorker Hotel, New York City.

Jan. 5-6—15th Annual Wisconsin Pesticide Conference with Industry, University of Wisconsin, Madison, Wis.

Jan. 5-6—Arkansas Plant Food Conference, Arkansas Plant Food Educational Society and University of Arkansas cooperators, Little Rock, Ark.

Jan. 5-7—Eleventh annual convention, Agricultural Aircraft Assn., Inc, Hotel El Dorado, Sacramento, Cal.

Jan. 6-7—Western Colorado Horticultural Society, Annual Meeting, Civic Auditorium, Grand Junction, Colo.

Jan. 10-11—Texas Annual Fertilizer Conference, Texas Plant Food Educational Society and Texas A&M cooperating, College Station, Texas.

Jan. 12—Clemson College Fertilizer Meeting for manufacturers, dealers and salesmen, Wade Hampton Hotel, Columbia, S.C.

Jan. 10-11—Annual Winter Meeting, Ohio Pesticide Institute, Nationwide Inn, Columbus, Ohio.

Jan. 11-13—Agricultural Ammonia Institute, 10th annual convention, Memphis, Tenn.

Jan. 11-13—1961 Beltwide Cotton Production - Mechanization Conference, Poinsett Hotel, Greenville, S.C.

Jan. 12-13—Arizona Aerial Applicators Assn. 8th annual conference, The Wigwam, Litchfield Park, Ariz.

Jan. 17—Annual meeting of Georgia Plant Food Educational Society, Continuing Education Center, Athens, Ga.

Jan. 17-18—Third annual Agricultural Pesticide Conference, Purdue Memorial Center, Purdue University, Lafayette, Ind.

Jan. 17-18—Arkansas Plant Food Conference, Arkansas Plant Food Educational Society and University of Arkansas cooperators, Little Rock, Ark.

Jan. 17-18—Annual meeting, Georgia Plant Food Educational Society, Georgia Center for Continuing Education, Athens, Ga.

Jan. 18-19—Pacific Northwest members of Western Agricultural Chemicals Assn., 8th annual meeting, Benson Hotel, Portland, Oregon.

Jan. 18-19—Eighth Annual Western Agricultural Chemicals Assn. Northwest Conference, Benson Hotel, Portland, Ore.

Jan. 18-20—14th Annual Southern Weed Conference, Hotel Soreno, St. Petersburg, Fla.

Jan 19-20—14th annual Southern Farm Forum, Roosevelt Hotel, New Orleans, La.

Jan. 23-25—Southeastern Branch, Entomological Society of America, 35th annual meeting, Admiral Semmes Hotel, Mobile, Ala.

Jan. 23-27—Annual Purdue Pest Control Operators' Conference, Purdue Memorial Center, Lafayette, Ind.

Jan. 24—Discussion on current recommendations for the control of pests in Kentucky, Room 232, Agricultural Experiment Station, University of Kentucky, Lexington, Ky.

Jan. 25-26—Custom Spray Operators' Training School, 13th annual meeting, University of Illinois, Urbana.

Jan. 26-27—Colorado Agricultural Chemicals Assn., annual meeting, Cosmopolitan Hotel, Denver, Colo.

Jan. 25-26—Symposium on "Effects of Environment on Crop Response to Fertilizers," Tennessee Valley Authority Fertilizer Development Center, Muscle Shoals, Ala.

Feb. 1-2—Soil Science Society of North Carolina Annual Meeting, Williams Hall, North Carolina State College, Raleigh, N.C.

Feb. 6-8—58th annual meeting, Association of Southern Agricultural Workers, Agronomy Section, King Edward Hotel, Jackson, Miss.

Feb. 14-15—Second Annual Aquatic Weed Control Society meeting, LaSalle Hotel, Chicago.

Feb. 15—"Pesticides Review for Coastal Counties," sponsored by Western Agricultural Chemicals Assn. and California State Polytechnic College, on campus, San Luis Obispo, Cal.

Feb. 16-17—Annual joint meeting, Midwest Industry - Agronomists, Edgewater Beach Hotel, Chicago.

March 13-15—Spring meeting of Western Agricultural Chemicals Assn., Disneyland Hotel, Anaheim, Cal.

June 27-29—Twelfth Annual Fertilizer Conference of the Pacific Northwest, Marion Hotel, Salem, Ore. Chairman: B. R. Bertramson, agronomist, Washington State University, Pullman.

Meeting Memos listed above are being listed in this department this week for the first time.

Jan. 4-6—Northeastern Weed Control Conference, 15th annual meeting,

CALENDAR FOR 1961

JANUARY

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New Grants Made for Agricultural Research

DURHAM, N.H.—The New Hampshire Agricultural Experiment Station here has received research grants totalling $6,100 for testing of fungicides for fruit and vegetable crops under supervision of Dr. Avery E. Rich, plant pathologist.

The sum of $2,500 was given by the Shell Development Co., Modesto, Cal., for experimentation on the effectiveness of new materials to combat apple scab. It is a continuation of a grant received yearly for the past five years. Dr. Rich, aided by Saffet Catani, graduate research assistant, has been testing the fungicides on seedlings in the greenhouse and in orchards.

A grant of $3,600 from the General Chemical Division, Morristown, N.J., will be used by Dr. Rich and another graduate research assistant, Mrs. Nina B. Aasgaard, in testing materials to control fungi of apples, potatoes and tomatoes. This project has been conducted in the laboratory, greenhouse and in the field for the past eight years.

James W. Carroll Heads New Jersey Plant Food Society

NEW BRUNSWICK, N.J.—James W. Carroll of Chamberlin-Barclay, Cranbury, is the new president of the New Jersey Plant Food Educational Society.

Elected at the society's meeting during the Rutgers fertilizer-lime meeting, he moves up from vice president to succeed L. Graham Campbell of the Bennett-Clayton Division, Unexcelled Chemical Co., also Cranbury.

Wallace M. Mitcheltree, extension soils specialist at Rutgers, is the new vice president. The society reelected its treasurer, C. A. LuBow of the Star Fish and Bone Fertilizer Co., Bridgeton, and secretary, Dr. Stacy B. Randle, state chemist at Rutgers.

New on the board of directors are Francis R. Raymaley of Alloway, American Cyanamid Co., New York; George Serviss, Cooperative G L F, Ithaca, N.Y.; Dr. Russell B. Alderfer, chairman of the Department of Farm Crops at Rutgers, and Mr. Mitcheltree.

Less than a year old, the society's membership has grown from 22 to 87. Mr. Campbell, in his presidential report, called for a doubling or tripling of this number within the next year.

NEAR-RECORD

SACRAMENTO—California farmers produced a near record 31,108,900 tons of crops in 1960, William E. Warne, Director of the California Department of Agriculture, has announced. This production was valued at $1,904,313,000.

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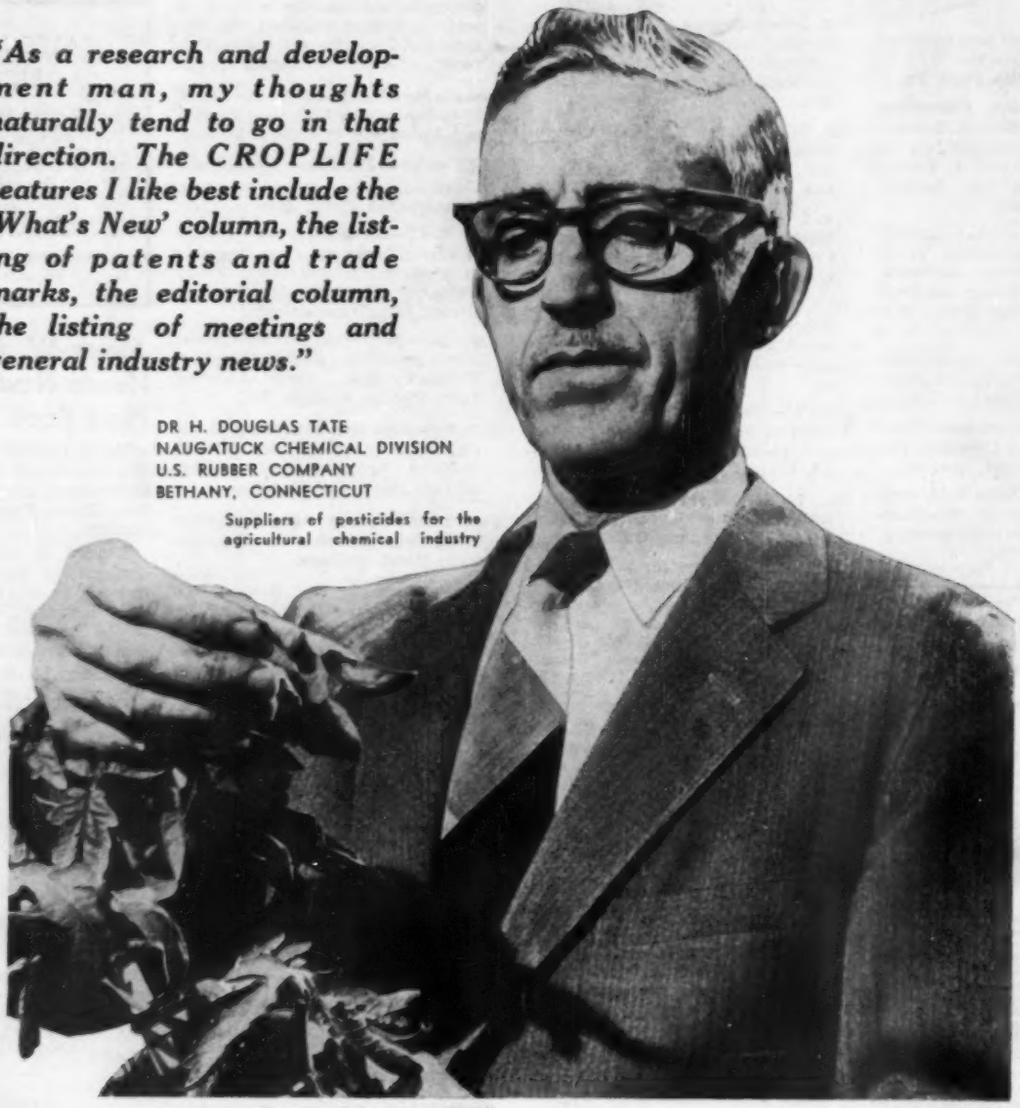
DR H. DOUGLAS TATE
NAUGATUCK CHEMICAL DIVISION
U.S. RUBBER COMPANY
BETHANY, CONNECTICUT

Suppliers of pesticides for the agricultural chemical industry



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